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JOURNALS OF SIEGES

CARRIED ON

BY THE ARMY

UNDER

The Duke of Wellington,

IN SPAIN,

BETWEEN THE YEARS 1811 AND 1814.

WITH NOTES.

BY COLONEL JOHN T. JONES,
(Corps of Royal Engineers,)
AIDE-DE-CAMP TO THE KING.

SECOND EDITION.

IN TWO VOLUMES.

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ERRATA.

Page 8, line 10, *for* on *read* or.
34, line 12, *for* intercept *read* interrupt.
71, line 4, *for* etonnoir *read* entonnoir.
231, line 24, *for* 5 *read* 3.

JOURNALS OF SIEGES

IN

SPAIN AND PORTUGAL.

CHAPTER I.

BLOCKADE OF PAMPLONA, FROM THE 25TH JUNE TO 1ST NOVEMBER, 1813.

The battle of Vitoria was fought on the 21st June, and on the 25th, Lieutenant General Hill with the right wing of the allies closely shut up Pamplona, preliminary to its being immediately besieged.

The means available for this purpose consisted of a proportion of engineers' stores and a battering train demanded from England in the winter, and now on board transports on their passage from Corunna to Santander.

The train was composed of

14 iron 24-pr. guns,	with 16,800 round shot. 700 rounds, grape. 3,500 rounds, spherical. Total 21,000 rounds, or 1,500 rounds of all natures each piece.

4 iron 10-in. mortars,	with 1,800 common shells. 200 rounds of pound shot. Total 2,000, or 500 rounds for each mortar.
6 brass 8-in. howitzers,	with 3,000 common shells. 2,700 spherical shells. 300 rounds common case. Total 6,000, or 1,000 rounds each howitzer.
4 iron 68-pr. carronades,	No ammunition; therefore, between 8-inch howitzers and carronades, there were only 600 rounds each.*
28 pieces in all.	

To this equipment it was proposed to add a heavy brigade of six iron 18-pounders, moving with the army, and to bring forward twenty-four brass 12-pounders and ten 6-inch brass howitzers of the French field-ordnance captured at Vitoria; which would give twenty guns for battering, ten heavy howitzers and carronades, twenty-four 12-pounders for ricochet fire, and ten 6-inch howitzers for general purposes.

The four 10-inch mortars with the equipment at St. Ander it was not proposed to bring forward, from the difficulty of procuring means of transport.

---

* It should be mentioned, that the demand for this equipment expressed 1,500 rounds a gun, meaning thereby that there should be sent that quantity of round shot, independent of grape and spherical, but the requisition not being sufficiently explanatory, only 1,200 rounds per gun of round shot were sent, and the remainder was made up of other natures as above.

With respect to ammunition, there were 7,200 round shot for the six 18-pounders, or 1,200 rounds a gun, in the transports, independent of the proportion of 150 rounds which they carried with them in the field; and measures were taken for a quantity of Spanish 12-pounder shot being forwarded from Corunna and Ferrol for the field-guns.

Demands were also made on Lisbon and England for further supplies of powder.

26th June.

Major Frazer was detached to Santander, to order the transports into the harbour of Deba; or, if that should be impracticable from want of water, to send the guns and stores to that port in small craft, and land them in readiness for movement, whenever means of transport should be provided.

Major Frazer, on his arrival at Santander, found the transports working into the port, and immediately going on board and communicating his instructions to the commodore, the ships were ordered to continue their course, and arrived off Deba on the 30th.

The depth of water would not admit of the transports entering the port; but they anchored about two miles from the shore, and immediately began to tranship their cargoes into small vessels.

27th June.

Intelligence being received that a force of 10,000 or 12,000 French troops under General Clausel was in the neighbourhood of Logrona, three divisions of the army were put in movement to attack them, and head-quarters were transferred from Oscayen to Tafalla.

28th June.

On reaching Tafalla, it was ascertained that General Clausel had marched on Tudela, and, in consequence, head-quarters with the troops moved directly on Caceda; but the guns were obliged to make the detour of Caparrosa, on account of the difficulties of the direct road.

29th June.

It having become known, that the troops under General Clausel had crossed the Ebro on the 27th, leaving their artillery behind them, and were making forced marches along the right bank of that river to gain Zaragossa, there remained no hope of intercepting their retreat, and the troops halted for the day at Caceda.

On the 30th, head-quarters countermarched on Monreal, and on the 1st July were fixed at Huarte, near Pamplona.

The same day the Marquis of Wellington, attended by Sir R. Fletcher, reconnoitred the fortress to decide the point of attack, and give the necessary orders for commencing the operation.

The works, however, appeared in such good order, and the river so effectually shielded one side of the town and the citadel so covered the other, that the garrison being known to exceed 4,000 men, and to have upwards of 200 pieces of ordnance to aid their defence, neither the force which the army could spare, (28) nor the means it could command in ordnance, (29) stores, or materials, (30) were judged sufficient to ensure its reduction. In consequence the Marquis of Wellington decided to substitute a close blockade for a siege, and ordered the transports with the battering train from Deba to Bilboa.

The duties of the blockade were confided to Lord Dalhousie, with the 6th and 7th divisions of infantry; and the remaining force of the army moved forward to drive the French beyond the Pyrenees, and occupy the passes of Mayo, Roncevalles, &c. to prevent their return.

For the more effectual confinement of the garrison of Pamplona, and to strengthen the front of the blockading corps, the Marquis of Wellington ordered works to be thrown up all round the place, on the nearest heights favourably situated to command the several roads and communications. Nine redoubts, calculated for garrisons from 2 to 300 men each, were, in consequence, immediately marked out by Sir Richard Fletcher, on commanding points from 12 to 1,500 yards from the fortress; when that officer, being called to St. Sebastian to direct the siege, gave over the engineers' duties of the blockade to Major Goldfinch. The redoubts were ordered to be made of a strong field profile, and to be armed with the French field-guns captured at Vitoria, firing through embrazures.

The means of the department for this service were the tools and stores of the field depôt, and the twelve or fourteen sappers in charge of them.

The investing force furnished strong parties, which worked by regular reliefs throughout the day; but the greater portion of the labour was performed by the peasantry of the country put into requisition for this service by the Spanish authorities.

Neither the peasantry nor the soldiers received any working pay; nevertheless, through a vigilant superintendence and the exertions of the officers, the whole chain of redoubts was speedily in a state of defence. Garrisons were allotted to the several works, which were kept in them constantly prepared to receive and repel any attack; but the remainder of the blockading force was either placed under cover in the villages, or bivouacked on favourable spots just without the fire of the place; the whole, however, being in constant readiness to form under arms at their several alarm posts on the first intimation of the garrison making a sortie.

In the middle of July, Marshal Soult being in march with a very strong force to the relief of Pamplona, it became necessary to concentrate all the British and Portugueze forces in the Pyrenees to oppose him; and, in consequence, the blockade was transferred to the Spanish army of reserve of the Conde de Abisbal, and subsequently, on the 28th July, was entrusted to Don Carlos de España, with a force of Spaniards not exceeding 8 or 9,000 men.

Under these circumstances, increased exertions were made to strengthen the several defences of the blockading line.

Several buildings near the place were barricaded and formed into strong advanced posts, the passage along the roads was obstructed in various places, fleches were thrown up to protect the guards, and signal posts were established to communicate intelligence and orders round the whole blockading circle.

At the period when the army of Marshal Soult had penetrated to within a few miles of the fortress, and a desperate sortie might naturally be expected, all the advanced posts were reinforced at night, and chains of sentries were pushed out in advance, to guard against surprize on the passage of an individual, and the whole blockading force remained under arms prepared to repel any powerful effort. These precautions succeeded in preventing a single communication of any kind passing between the garrison and the force engaged for their relief, on the 28th, 29th and 30th July, almost within view of the ramparts.

The blockade of Pamplona having been well regulated, admitted of no brilliant actions; but the duties and labours of the troops, in consequence of the smallness of their numbers, were, from its commencement to its termination, constant and great. Their vigilance never relaxed for a moment, and in every sortie the garrison was firmly met and quickly repulsed.

This blockade is probably a solitary instance of the investment of a large place, situated close to its own frontier, having been so successfully maintained for the long period of three months, as to preclude the garrison from once communicating with, or receiving intelligence from their friends. (31)

On the other hand, the French governor, Baron Cassan, is justly entitled to the highest degree of praise, for having driven off his submission till the latest possible moment, by inducing his garrison to be satisfied with very slender rations of inferior food; and under such circumstances to perform the duties of a blockaded place with far more than the usual vigour and activity.

On the 26th October, however, his resources being nearly expended, he sent to Don Carlos, proposing to evacuate the place, if permitted to take with him six pieces of cannon; which being refused, he proposed to retire with his garrison into France, under an engagement not to serve against England or her allies for a year and a day. Lord Wellington, however, had given positive orders for the garrison being made prisoners of war; which being notified to General Cassan, he broke off all communication, with the declaration that he would never submit to such terms, and continued to resist till the 31st October, when his last day's food being in the course of delivery, and escape hopeless, he had no alternative but immediate surrender.

This helpless and distressed state of the garrison was perfectly known to the blockaders; nevertheless, they granted them similar terms of capitulation with the garrison of St. Sebastian, and on the 1st November, they marched out prisoners of war, and were embarked at Passages for England.

CHAPTER II.

SIEGE OF ST. SEBASTIAN, BETWEEN 11TH JULY AND 8TH SEPTEMBER, 1813.

ON the retreat of the French army out of Spain, in consequence of its defeat at Vitoria on the 21st June, 1813, Marshal Jourdan threw a garrison into St. Sebastian, of between 3000 and 4000 men, which place was immediately afterwards closely invested on the land side by Sir Thomas Graham, commanding the left wing of the allied army, and blockaded on the sea side by a squadron under Sir George Collyer.

4th July.

The Marquis of Wellington, having his headquarters at Lanz, sent instructions to the commanding engineer and commanding officer of artillery, to prepare for commencing the siege of St. Sebastian; and, with that view, desired them to order the transports with the battering train and siege stores from Bilboa to Passages, and the heavy brigade of 18-pounders to move forward from Vitoria.

11*th July.*

The French army having been driven beyond the Pyrenees, and the allied troops established to guard the passes, Marquis Wellington transferred his head-quarters on the 10th to Zubieta, and on the 11th to Ernani, near St. Sebastian, and the same evening authorized the commencement of some preliminary operations to drive the garrison from their advanced posts on the Isthmus, which must take place under any plan of attack.

RECONNOISSANCE.—*Plate XI.*

12*th July.*

This morning early, the Marquis of Wellington, attended by Major Charles F. Smith, the senior engineer with the left wing of the army, reconnoitered the fortress, from the hills in front of Passages de la Calzada, and from the mountainous height of Olia opposite the castle.

DESCRIPTION OF THE DEFENCES.

The town of St. Sebastian, containing nearly 10,000 inhabitants, is built on a low peninsula, running north and south; the defences of the western side being washed by the sea, and those on the eastern side by the river Urumea, which, at high water, covers four feet of the masonry of the scarp.

The works of the land-front across the Isthmust consist of a single front of fortification, exceeding 350 yards in length, with a flat bastion in the centre, covered by a hornwork, having the usual counterscarp, covered-way, and glacis; but the defences running lengthways of the peninsula, consist merely of a simple rampart wall, indifferently flanked, without either ditch, counterscarp, glacis, or other obstacle in its front; and further, this naked scarp wall, on the eastern side, is seen from its summit to its base, from the Chofre range of sand hills, on the right of the Urumea, at distances from five hundred to a thousand yards.

At the extremity of the peninsula, a rocky height called Monte Orgullo, of the considerable base of 400 yards, by 600 yards, rises steeply to a point, which is occupied by a small work or citadel called Fort La Mota. The whole of this promontory is cut off from the town by a defensive line near its foot; and its southern face is covered with batteries which plunge into the lower defences of the place, and add materially to their powers of resistance.

It appears to have been an unaccountable oversight, (even looking to moderate security against surprise,) to have left the eastern defences of the town without cover or a second obstacle, as the Urumea, for two hours before and after high water, is so shallow as to be fordable; and, for the same period, a considerable space becomes dry on the left bank of the river, by which troops can march from the Isthmus, along the foot of the sea scarp wall of the town, to its very extremity next the castle.

Marshal Berwick, when he besieged St. Sebastian in 1719, aware of this circumstance, threw up batteries on the Chofre sand hills, to breach the eastern town wall, and, whilst that was effecting, pushed on approaches along the Isthmus, and established a lodgment and batteries on the covered-way of the hornwork of the land front, to prevent its left branch impeding the approach to the breach. Further proceedings, however, were unnecessary, for, as it usually happened in former wars, as soon as the breach became practicable, the governor capitulated for the town, and retired with his garrison into the castle.

On the proposition of Major Charles F. Smith, the Marquis of Wellington sanctioned the same plan of attack being now followed, and decided to form two breaches in the town wall from distant batteries on the Chofre sand hills, and storm them as soon as practicable, by a bold advance along the left of the Urumea at the period of low water. The operations on the Isthmus were to be confined to dislodging the garrison from a post they occupied about 700 or 800 yards in advance of the town, formed by the convent of St. Bartolomeo and a small redoubt; and also from a temporary circular work, constructed on the causeway with casks, about 8 feet in height, so as to prevent any annoyance from those points on the flank of the column whilst marching to the assault.

Subsequently it was decided to construct two batteries on the heights of St. Bartolomeo, to fire in aid of the breaching batteries.

The ENGINEERS' MEANS available for this attack were:—

Officers.

Lt. Colonel Sir R. Fletcher, Bart. { Commanding, killed
———— J. F. Burgoyne, wounded
Captain Geo. Henderson
———— Charles Rhodes, killed
———— C. G. Ellicombe, B. M.
———— C. F. Smith, B. M.
———— G. G. Lewis, badly wounded
———— Richard Boteler
———— George Collyer, killed
Lieutenant F. Stanway
———— H. D. Jones, { severely wounded, and taken prisoner
———— A. Marshall, wounded
———— Philip Barry, do.
———— H. A. Tapp, do.
———— W. Reid, do.

Lieutenant E. Matson
——— L. Machell, killed
——— H. Wortham

Four sub-lieutenants and 305 rank and file of the corps of Royal Sappers and Miners.

The proposed operation being confined to the erection of distant batteries, it was not deemed necessary to call on the troops for additional men to be attached to the department; but merely to supply, at the required moment, the number of carpenters necessary for laying the platforms.

Tools and Stores.

4,000 Entrenching tools, and an ample supply of smaller articles.

ARTILLERY MEANS.

In order to render the heavy ordnance with the army adequate to the proposed operation, Sir George Collyer zealously undertook to land six of the main-deck guns of his ship, which made the supply as follows:—

14	24-pounder	iron guns,	9 feet	Battering train from England.
6	24 do.	do.	6½ ...	From H.M. ship, Surveillante.
6	18 do.	do.	8 ...	Field-brigade moving with the army.

6	8-inch howitzers brass,	Battering train from England.
4	68-pr. iron carronades,	
4	10-inch mortars, iron,	
—		
40 pieces.		

The ammunition was the same as detailed pages 1, 2 and 3.

Officers and Men.

Lieutenant Colonel Dickson, commanding.

BRITISH AND GERMAN.

Lieutenant Colonel Hartman, K.G.L. { in charge on the left.

Left of the Attack.	Captain Morrison
	——— Power
	Lieutenant Mielman, K.G.L.
	———— Shaw
	———— Oldham
	———— Story
	———— Stanway
	———— Goeben, K.G.L.
Right of the Attack.	Lieutenant Colonel May, A. A. Gen.
	———————— Frazer
	Major Webber Smith
	Captain Dubourdieu
	——— Parker
	——— Dansey
	——— Deacon
	——— Macdonald
	Lieutenant Johnstone
	———— Blachley
	———— Ord, Brigade Major.

Right of the Attack, continued.

Lieutenant Brereton
———— England
———— Heron
———— Hardinge
———— Harding
———— Pascoe
———— Monro
———— Bloomfield
———— Williams
———— Macbean.

PORTUGUEZE.

1 Major, 1 Captain, 6 Lieutenants.

ROYAL NAVY.

Lieutenant O'Rielly
———— Dunlop
Mr. Marsh,
—— Harvey,
—— Newbys,
Mid-shipmen.
His M. ship Surveillante.
—— Bloye, Master's-mate, H.M.S. Lyra.
—— Lost, do. do. do. Sparrow.

The Artillery men for the operation were as follows:—

Royal Artillery, non-commissioned officers and gunners	369
Portuguese do. do.	107
Detachment of seamen from H. M. ships Surveillante and Lyra .	50
Total	526

BESIEGING FORCE.

Fifth Division of Infantry, under Major General Oswald, left of the attack.

Brigadier Generals Bradford and Wilson's Portugueze Brigades, right of the attack; forming altogether a force of 9 or 10,000 men.

The guns, ammunition and stores were all landed at Passages, from whence an excellent road, of about 1½ miles leads to the Chofre sand-hills; but the communication from Passages to the left was very heavy and bad, and exceeded five miles.

Night between 11*th and* 12*th July.*

No. 1 battery for four 18-pounders at 220 yards, and No. 2 battery for two 8-inch howitzers at 200 yards distance, were commenced against the Convent of St. Bartolomeo, and working parties were employed in raising them throughout the following day.

Night between 13*th and* 14*th July.*

The trenches were opened this evening in front of Passages de la Calzada, and batteries No. 11, 12, 13 and 14, were marked out on the sand-hills at distances from 600 to 1300 yards from the walls of the place, for twenty 24-pounders, and four 8-inch howitzers.

The guns were intended to breach the exposed scarp-wall between the towers A and B, and the howitzers to be used for general purposes of annoyance. (32) The length of wall between the towers was 110 feet, and the scarp-wall 27 feet in height.

The river Urumea being between these batteries and the place, and their distance being so considerable, no parallel of support was deemed necessary; but the batteries were connected by good trenches of communication, and subsequently approaches were opened nearly from the village of Passages.

The batteries against the Convent of St. Bartolomeo were completed, and the artillery armed them with four 18-pounders and two 8-inch howitzers. Lieutenant Tapp was wounded in opening the embrazures.

14th July.

The Marquis of Wellington set off from Ernani to rejoin the main body of his army in the Pyrenees, leaving the command of the siege to Lieutenant General Sir Thomas Graham.

At day-light the batteries opened against the convent. The defenders replied with a brisk discharge of musketry, and attempted to fire from a small field-piece mounted on the belfry, but it was immediately silenced. The cannonade from the town was very brisk, but without much effect.

In the course of the morning two of the 18-pounders commenced firing hot shot into the building, and the howitzers were employed to check the musketry from the redoubt, to prevent the defenders from working, and also to throw shells and carcasses into the roof.

The building was much injured by the practice of this day, without, however, being set on fire.

15th July.

Sir R. Fletcher arrived from the blockade of Pamplona, and assumed the direction of the attack.

The fire of the two batteries continued against the convent and redoubt. The musketry of the defenders was almost silenced, and the south end of the church beaten down.

The roof of the convent appeared several times to be on fire, but, apparently in consequence of the exertions of the garrison, it never rose to any height.

At 2 o'clock a detachment of Caçadores was pushed forward to ascertain whether the enemy still held the convent in force, and to occupy it if no great opposition were made; but the French showed themselves in such numbers from the buildings adjacent to the convent, and reinforcements arriving from the town, the Caçadores were soon obliged to retire, which they effected after sustaining some loss.

Five 9-pounders, and two heavy 5½-inch howitzers, were placed in position on the opposite side of the Urumea, to fire across the river against the redoubt adjoining to the convent.

16th July.

The batteries continued their fire against the convent, and a large portion of the front of the building was laid open, and practically breached.

The fire of hot shot was continued from one gun, but with no better success than heretofore. There were frequently appearances of fire in the roof, but the garrison found means almost immediately to extinguish them. Except for this purpose, they did not appear to keep any men in the main building, but sheltered their principal force in the outhouses, to avoid loss from the cannonade, in readiness, however, to move to the convent if necessary, as was the case yesterday when attacked by the Caçadores.

Strong working parties were employed in raising batteries 11, 12, 13 and 14. The fire from the place was not great, and but few casualties occurred amongst the workmen.

17th July.

The fire against the convent continued. Two of the 18-pounders were turned to breach the garden wall in the direction of the redoubt, which was soon effected, and the end of the convent was also entirely beaten down by nine A.M.

At ten o'clock A.M. the convent and redoubt were assaulted by the 9th Regiment, three companies of the Royal Scots, and strong detachments of Portugueze, and carried with little opposition. After this success, the assailants, unnecessarily and imprudently, pushed down the hill to the isthmus, to meet a body of the garrison approaching from the town to support the convent; by which measure they exposed themselves to a severe fire from the place, under cover of which the French troops attacked and drove them back, making some of the wounded prisoners.

Two heavy 6-pounders, under Lieutenant Mielman, were placed on the right to support the attack of the redoubt, and proved of material assistance to the assailants.

The field-pieces on the other side of the river were also served with great effect during the assault.

Lieutenant Mielman was severely wounded on this occasion.

Expenditure of ammunition against the convent and redoubt.

18-pounder round .	2505
do. grape .	19
8-inch shells . . .	331
6-inch spherical .	143

As soon as the convent was carried, a working party was employed to alter the redoubt, and strengthen the parapet towards the place.

At dusk two batteries were commenced on the heights of St. Bartolomeo on the isthmus, which have a great command over the land front, to enfilade and take in reverse the defences of the place, viz.

No. 3, for six 18-pounder guns.
No. 4, for two 8-inch howitzers.

Also two additional batteries on the right of the attack, viz.

No. 15, for four 68-pounder carronades.
No. 16, for four 10-inch mortars.

The carronades, besides aiding to breach, were intended to co-operate with the mortars in a fire of shells on the land front.

18*th July.*

The garrison were observed to be actively employed in throwing up traverses on the land front, and taking various measures for their security.

This day the following ordnance was dragged up the mountain of Olia to battery No. 11.

Two short 24-pounder guns.
Two 8-inch howitzers.

This battery was proposed, although at the distance of 1300 yards, in consequence of the height of the mountain giving it a command over the works of the castle. It was to act against the Mirador, and other batteries of the castle, and also to annoy the land fronts by a reverse fire.

Working parties of the troops continued to be steadily employed in throwing up the several batteries, and perfecting their communications.

Night of the 18*th July.*

On the isthmus the suburbs of St. Martin, which the garrison had burned, were occupied, and a lodgment made in them, with a communication down the hill from the rear; the French, however, continued to hold the circular redoubt, and added much to its strength by cutting through the causeway in its front, and forming a parapet.

Two more 8-inch howitzers were taken up to the mountain battery No. 11, on the right.

No. 12 and 13 batteries on the sand-hills were completed and armed.

19*th July.*

Only five short 24-pounders were received from the Surveillante. Two of them were taken to No. 11 battery, and the remaining three were kept to arm No. 14, on the right of the attack. The sixth gun could not be landed on account of the weather.

The batteries on the isthmus were completed and armed this afternoon.

The batteries on the right were also finished this day, and at night the guns were moved into No. 14.

The following were the armament of the batteries, the orders for the direction of their fire, and the arrangments for the artillery service generally.

Lieutenant Colonel Hartman to have the charge of the batteries on the isthmus.

Batteries.

About 800 yards from the body of the place.	No. 3, 6 18-pounder guns. No. 4, 2 8-inch howitzers. — 8 pieces on the isthmus.	To act against the defences of the place in aid of the breaching batteries.

The batteries on the right to be under the direction of field-officers as follows:

t 1300 yards irador, and to the h.	No. 11,	2 short 24-pr. guns. 4 do. 8-inch howitz.	Major Webber Smith.	Against the Mirador and Castle, and to annoy the land fronts.
yards to the .	No. 12,	2 do. 24-pr. guns.	do.	Against defences.
yards to ch.	No. 13,	4 do. 24-pr. guns.	Major Arriaga.	To assist in breaching between A and B.
yards to ch.	No. 14,	8 long 24-pr. guns. 3 short 24-pr. guns.	Lt. Col. Frazer.	To breach between A. and B.
		23 pieces to open on the 20th July.		
nst breach, nt 520 yards, to annoy the nces.	No. 15,	4 short 68-pr. carronades.	Lieutenant Colonel Frazer, when ready.	
gainst land- t and castle, yards to ch.	No. 16,	4 10-inch mortars.	Major Webber Smith, when established.	

Lieutenant Colonel May to take a general superintendance under the commanding officer.

Night between 19th and 20th July.

Approaches were struck out to the right and left of St. Martin towards the circular redoubt.

20th July.

At eight A.M. the batteries opened their fire against the place, viz. No. 11, 12, 13 and 14 on the right, and No. 3 and 4 on the left of the Urumea.

From the looseness of the sand with which the batteries were constructed, it was found impossible to keep the soles of the embrazures sufficiently clear to use with effect the three short guns mounted on low ship carriages in No. 14, and, after a few rounds, these guns were obliged to cease firing.

The garrison returned a heavy fire from all the guns that would bear on the breaching battery, and from several mortars.

One of the long 24-pounders in No. 14 was rendered unserviceable by a shot striking it in the muzzle, and a second was obliged to cease firing from a punch breaking in the vent, which could not be extracted. Several wheels, also, were broken by shot.

Captain Dubourdieu received a mortal wound in the head from a splinter of a shell.

The weather was extremely rainy and severe for the season; nevertheless, though there were only six 24-pounders in action in breaching battery No. 14 during a great part of the day, a considerable impression was made on the wall between towers A and B. The parapet, which was only four feet thick, was cut through.

The fire of No. 11, though so distant as 1500 yards, was, from its advantageous situation on the flank of the breach, of considerable assistance; but the direct batteries No. 12 and 13, at

770 and 950 yards, did not afford all the effect requisite for breaching.

The batteries on the left kept up a brisk dis charge, and, though also at too great a distance, materially aided in checking the fire of the place.

There being three spare travelling 24-pounder carriages in the park, they were taken to No. 14 breaching battery this night, and the three short 24-pounder guns were taken off the ship carriages, and mounted on the travelling carriages, in readiness to open in the morning.

Night between 20*th and* 21*st July.*

Early in the evening the garrison abandoned the circular redoubt.

A working party of 700 men had been prepared to open a parallel across the isthmus, but the night proving extremely dark, tempestuous and rainy, the men dispersed amongst the ruined buildings of St. Martin, and not more than 200 could be collected together; therefore only about one-third of the parallel, and the right approach to it, were opened.

21*st July.*

All the batteries resumed their fire at daylight this morning as before.

Breaching battery No. 14 fired with nine 24-pounder guns only, the artificers not having been able to clear the vent of the gun stopped up by the broken punch.

At ten o'clock the batteries ceased firing, whilst a summons was sent into the place; but the governor having refused to receive the letter, the fire was resumed in about an hour and a half.

The batteries continued to be directed on the same points, those against the breach making great progress. The fire of the place was directed against the breaching battery only. It was apparent from the commencement of the operation, that the garrison wished to spare their ammunition, as they scarcely ever fired at working parties bringing shot, &c., and at this time many of their shells, which having been thrown with great correctness, might have done much mischief, were not loaded with sufficient powder to burst them. Many shells, which exploded with their fuses downwards, were observed to spring up merely a few feet from the ground and fall again harmlessly, almost on the same spot.

The fire of the batteries on the isthmus was of good service against the land front, and also in enfilading the rampart behind the breach. The reverse fire from the heavy howitzers in battery No. 11, on Mount Olia, plunged into the hornwork at a distance of 1600 yards with such effect, that the garrison, having no bomb-proof cover, were obliged to dig trenches to protect themselves from splinters, and maintain their communications along its interior.

There were a good many casualties in the batteries this day. Lieutenant Dunlop, of the navy, was severely wounded, besides which four artillery men and seamen were killed and twelve wounded.

Night between 21*st and* 22*d July.*

The left communication, and the remainder of the parallel across the isthmus were opened. The parallel near its left crossed a drain level with the ground, four feet high, and three feet wide, along which a pipe was laid to convey water into the town. Lieutenant Reid ventured to explore the drain, and at the end of 230 yards, found it closed by a door in the counterscarp, opposite the face of the right demi-bastion of the hornwork. The ditch being very narrow, it was thought that, by forming a mine at the extremity of the drain, the explosion would throw sufficient rubbish against the escarpe wall, only 24 feet high, to form a road over it; and in consequence, a length of eight feet at the end of the aqueduct was stopped with filled sand-bags, and 30 barrels of powder of 90 lbs. each lodged against it, with a saucisson led to the mouth of the drain.

22d July.

The fire of No. 12 battery was discontinued; but all the other batteries resumed their fire as before.

The breaching battery fired with ten 24-pounders, the gun which had its vent stopped, having been rendered fit for service yesterday evening.

The fire from the breaching battery was most vigorous this day, and by the evening a breach was effected between A and B, which appeared practicable. The expenditure from the breaching battery alone amounted to 3,500 rounds; which for ten guns in action, averaged 350 rounds a gun, expended in about 15½ hours of day-light. Such a rate of firing probably was never equalled at any siege, great accuracy of range being at the same time observed.

The fire of the place was now very inconsiderable, but the garrison, whose proceedings were visible from No. 11 battery on Mount Olia, were observed to be unremitting in their exertions in placing sand-bags, and in preparing interior defences against the moment of the assault.

The weather, which hitherto had been very bad, cleared up this day, but there was a severe storm of rain in the evening.

The garrison added a second gun to the flank of the sea line (St. Elmo) under the Mirador.

The guns of the fortress were considered to be much enlarged in the vent, as several of them gave the appearance of two explosions when fired. This, indeed, was beginning to be the case in the breaching battery, as some of the vents of the guns were so much enlarged, that a moderate sized finger might be put into them.

The batteries on the isthmus continued their fire with good effect.

This night four 68-pounder carronades were mounted in battery No. 15, to be employed against the breach and defences.

The two 24-pounders in No. 12 were brought from thence and added to No. 14 breaching battery.

Lord Wellington came from Lesaca, and visited the right of the attack.

23d July.

Breaching battery No. 14 continued its fire with twelve 24-pounders, and at a very early period in the morning the breach between the towers A and B was considered perfectly practicable. The fire of the battery was then turned to make a second breach between th tower A and the demi-bastion; but Sir Richard Fletcher having communicated to Colonel Dickson, that, according to information he had received, the wall was much thinner and weaker at C, and that Sir Thomas Graham wished the battery to be directed against that point, the fire was so turned accordingly; and with such effect, that by the evening a second practicable breach was formed of at least 30 feet wide.

The fire of the place being much diminished, No. 13 battery only fired 72 rounds this day; but battery No. 11, on Mount Olia, kept up a steady fire of annoyance.

This morning the four 10-inch mortars were placed in battery No. 16, at the distance of 850 yards from the breach, and as soon as they were ready, they opened against the defences, and also to intercept the garrison entrenching the breach, and cutting off the communication, which they appeared to be engaged in.

The 68-pounder carronades were directed to the same objects, as also to destroy a stockade separating the high rampart and parapet of the curtain from the lower work towards the breach.

From the effect of these batteries, before mid-day the houses in the vicinity of the breach were on fire, and the flames spread rapidly.

All the arrangements being made for the assault to take place to-morrow morning, a brisk fire of grape was kept up during the night on the breaches.

24th July.

The troops destined for the assault lined the trenches before day-light; but from that point the burning houses near the breach, having the appearance of forming a material obstacle to the advance of the assailants after carrying the breach, (though not altogether the case,) it was thought best to abandon the operation for this day, and the troops were withdrawn.

The breaching battery continued its fire on the breach at C, with twelve 24-pounders, and after two or three hours firing, that breach was rendered wider, more easy of ascent, and in every respect practicable.

By desire of Sir Richard Fletcher, the fire of part of the guns was turned again on the wall between tower A and the demi-bastion, and the remaining fire of all the batteries was directed against the defences, by which means some stockades and traverses were destroyed, which the garrison had partly completed, to the left of each breach during last night.

It was discovered that the garrison had mounted during the last night two field-pieces on the top of the cavalier or high flat bastion, in the centre of the land front. This work had a command of 12 or 15 feet over the other defences, and as its artillery looked down in a certain degree on the curtain, and would cooperate much in its defence after the loss of the breaches, it was judged highly necessary to silence them.

There were also guns in the following situations, the fire of which was ordered to be silenced, viz.

A light gun on the left branch of the hornwork, which bore towards the breach.

Two casemated guns on the flank of the cavalier, bearing on the approach to the breach.

Two field-pieces on an entrenchment formed across the ditch of the land front, which also bore on the approach to the breach.

Two guns, believed to be field-pieces, in the flank under the Mirador, bearing on breach C.

A gun behind tower A.

The parapets at these points were laid open or much injured in the course of the day by direct fire from the batteries, (33) but the guns being drawn back behind other portions of the parapet could not be injured. The artillery, however, expressed to Sir Thomas Graham full confidence of being able to keep nearly all these pieces in check, and also to keep the parapets clear of men, so as to prevent any great fire being directed on the assailants during the assault of the breaches, if made during daylight.

Night between 24th and 25th July.

ARRANGEMENTS FOR THE ASSAULT.

The assault was ordered to take place in the morning, immediately that the tide should have fallen sufficiently to admit of the troops passing along the strand at the foot of the escarpe wall, which it was calculated would be precisely at the moment of day-break.

This service was confided to the 5th division, under Major General Oswald, one battalion of which was allotted to storm the further or lesser breach C, and Major General Hay's brigade the principal breach between A and B.

The whole of the storming party (about 2000 men) were directed to assemble in the trenches on the isthmus, and file out of the right of the parallel; the explosion of the mine formed at the back of the counterscarp wall of the hornwork to be the signal for advancing.

The distance the storming party had to march from the end of the trench to the breach, in face of an extensive front of works, was about 300 yards, the surface of the ground being much broken by rocks covered with sea weeds, which the receding tide had left extremely slippery, and further had formed large intermediate pools of water so as to prevent any regularity of formation being preserved in passing over them. Besides these obstacles the parapets of the flanking works of the place were almost entire, and lined with musketry, and the breaches were closely flanked by two domineering towers, which, though considerably injured, were still occupied. These visible difficulties, added to the bad effect produced by the assault having been countermanded on the previous morning, created an unlucky impression amongst the troops that they were about to be employed on a desperate service without a probability of success. To diminish these feelings and aid their efforts, a trench was completed during the night in advance of the parallel, to contain a party to fire on the defenders of the hornwork during the assault, at distances from 50 to 60 yards, and the batteries kept up an incessant fire through the night on the breaches to disturb the working parties of the garrison.

25th July.

EXECUTION OF THE ASSAULT.

The column for the assault being assembled in the trenches on the isthmus, at 5 A.M. it being, however, still too dark for the batteries on the right of the Urumea to distinguish objects and open on the defences, the mine was sprung, and blew down a considerable length of the counterscarp wall and glacis of the hornwork, which created so much astonishment amongst the garrison of the work that they abandoned the parapets of the left branch for a moment, and the right wing of the leading battalion reached the foot of the principal breach before any very heavy fire could be brought on them. The left wing, on filing out of the parallel, halted under cover of the retaining wall of the branch of the hornwork to regain their formation, whilst the right wing should mount to the assault.

Major Frazer, Royal Scotch, who commanded the advance, accompanied by the officer of engineers, Lieutenant Harry Jones, gallantly led up the breach closely followed by his party; when the defenders, taken almost by surprize, sought shelter amongst the ruins in its rear. The before mentioned officers immediately scrambled down the ruins into the houses; but the burning materials and the smoke which still issued in thick volumes, caused the men to hesitate and to commence firing from the crest of the breach.

After a momentary interval the garrison recovered from their surprize, and replied with a most destructive fire of musketry on the assailants which swept away the foremost ranks, whilst the rear equally suffered from musketry and hand grenades poured down upon them from the two towers on the flanks of the breach, and from shells thrown from the castle.

Major Frazer being killed, disorder spread amongst the ranks, and the defensive efforts of the garrison rapidly augmenting, the advanced party fell into utter confusion, and mostly sought shelter by returning into the trenches. A few determined men remained with Lieutenant Jones on the breach, waiting the junction of the support with the ladders in order to renew their efforts; but before the arrival of the ladders they were nearly all wounded, and the garrison descending the front of the breach carried many of them prisoners into the place.

The left wing of the first party on reaching the breach, seeing the hopeless state of the assault, and finding themselves exposed to a most galling fire from the works in their front and on their flanks, after discharging a few rounds of musketry returned also into the trenches.

The battalion allotted to storm the lesser and further breach C, which as having to march to the most distant point should have led, filed out of the trenches after the advance of the first assaulting party; and not finding space of dry ground between the wall and the river Urumea sufficient for a parallel movement with, or to pass to the right of the troops preceding them, they had not gained their point of attack when they witnessed the retreat of the assailants from the main breach, on which they also returned into the trenches.

Arrangements had been made by Colonel Dickson for the batteries on the Chofre sand hills to direct their fire during the assault on the high curtain, the barrack under the Mirador, and the enemy's artillery generally, a measure which would have most materially aided the troops; but though the guns were manned and prepared to open, it was so perfectly dark that the officers could not distinguish objects to direct their fire: indeed it did not become sufficiently light till after the return of the troops into the trenches to enable the artillery to ascertain what had occurred.

The loss in this attempt was
Eight officers and 121 rank and file killed.
Thirty officers and 142 do. wounded.
Six do. and 118 do. made prisoners.

Amongst the officers wounded, were Lieutenant Colonels Hill and Williams, and Major Snodgrass Portugueze service, and Major the Hon. J. Stanhope.

Of the engineers, besides Lieutenant Jones wounded and made prisoner on the breach, Lieutenant Machell was killed, and Sir R. Fletcher, Captain Lewis and Lieutenant Reid, were severely wounded.

The previous loss at this siege was

Three officers and 73 rank and file killed.
Thirteen do. and 288 do. wounded.

As soon as it became fully day-light the garrison proposed a truce for an hour, which being agreed to, they moved the wounded from the foot of the escarpe wall into the place. On the expiration of the truce, the batteries commenced a regular fire on the breach to prevent its being cleared or further retrenched, which fire was maintained uninterruptedly throughout the day.

Opinions were at the moment much divided respecting this failure, many officers of judgment and experience imputing it to want of a more forcible and combined effort on the part of the troops; and others of equal authority considering it as a natural consequence of the musketry fire of the place being nearly uninterrupted, the great distance which the covered approaches were from the breaches, the delay occasioned by filing the men out of a narrow trench, and the want of breadth, as well as the difficulties of the rocky strand at the foot of the wall along which they had to march to the assault, and further not having any support from their own batteries.

The efforts on the breach were certainly neither very obstinate nor very persevering, and would lead an unprejudiced person to adopt the former opinion, were it not stated from the highest authority that the troops did their duty, and were recalled because it was deemed beyond the power of gallantry to overcome the difficulties opposed to them.

> " Notwithstanding the distinguished gallantry of the troops employed, some of whom did force their way into the town, the attack did not succeed. The enemy occupied in force all the defences of the place which looked that way, and from which, and all round the breach, they were enabled to bring so destructive a fire of grape and musketry, flanking and enfilading the column, and to throw over so many hand-grenades on the troops, that it became necessary to desist from the assault.
>
> Though this attack has failed, it would be great injustice not to assure your Lordship that the troops conducted themselves with their usual gallantry, and only retired when I thought a further perseverance in the attack would have occasioned an useless sacrifice of brave men."—*Official report from Sir Thomas Graham.*

25th July.

Marquis Wellington, on receiving a report of the failure of the assault, came over from

Lezaca about 2 P. M. to give instructions for the further prosecution of the siege; but on examining into the state of his means, he found the supply of ammunition far too small to warrant any further immediate effort being made. In consequence, his Lordship decided to suspend all proceedings till the arrival of additional ordnance and ammunition from England, and directed that the guns should be withdrawn from the batteries and dragged to Passages, with the exception of two 24-pounders to be left in the breaching battery, and two 8-inch howitzers in the mountain battery No. 11.

After some consideration it was decided to persevere in the same plan of attack; but with the increased ordnance to enlarge the breach from its left extremity B to the salient angle of the left demi-bastion of the land front, and by the fire of additional batteries containing seven 24-pounders and four 8-inch howitzers to be established on the isthmus, to carry the breach from the salient angle of that bastion along its face to the end of the high curtain above it, so as to form one enormous opening or ascent of at least one hundred yards. Further, his Lordship becomingacquainted with the general discouragement of the troops employed on the operation, and not being altogether satisfied with the recent assault, arranged that a body of volunteers should be obtained from the army generally to bear the brunt of the next storming of the breaches.*

In the meanwhile the trenches were to be held by a guard of 800 men.

26th July.

Preparations were completed for the removal of the battering ordnance to Passages, and during the night the operation of dragging the guns out of the trenches was pursued with vigour.

27th July.

At daybreak, the garrison perceiving that the guns were removed from the batteries, in order to feel the guard and ascertain how the trenches were occupied, made a sortie from the hornwork, and at the same time pushed forward a party under cover of the supporting wall of the glacis. The latter turned the advanced trench, and so completely surprized the Portugueze guard that they made but little opposition

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* The gallant men who answered this appeal were,

Light division . .	150,	under Lt. Col. Hunt, 52d regt.
Guards	200,	—— Lieutenat Colonel Cooke.
King's Germ. Leg.	200,	—— Major Robertson.
Fourth Division .	200,	—— Major Rose, 20th regt.

and lost nearly 200 prisoners, whom the French immediately carried into the place.

In consequence of this loss, the guard on the isthmus was concentrated in a small portion of the left of the parallel, and the right of the trenches was only occasionally patroled.

28th July.

Marshal Soult attacked Lord Wellington in the hope of relieving Pamplona, and the result of that action not being known on the 29th when the enemy made a movement on Vera, the transports with the battering train were ordered to sea.

1st August.

The garrison surprized a patrole in the parallel and made it prisoners.

5th August.

The French forces under Marshal Soult having been beaten back on every point, the ordnance and stores were ordered to be re-landed at Passages.

6th August.

Working parties of the artillery commenced the above duty and continued to be employed till every thing was on shore.

8th August.

A feeling having spread amongst the troops that the garrison were mining under the circular redoubt of cask work on the causeway, the engineers were ordered to take precautions against its being blown up. Although the distance of the work from the place rendered such an attempt altogether improbable, the scheme of countermining was gladly adopted as it gave opportunity for procuring some miners from the line, (the total number belonging to the engineer's department at the left of the attack only amounting to four,) who might gain a little experience previously to having to execute any real mining which might become necessary should the assault of the breaches again fail. Accordingly a shaft was sunk 12 feet in depth (when water rose) and a gallery of 6 feet in height was carried round the redoubt. The soil being a loose sand, the whole of the interior was obliged to be sustained by frame work. The frames were placed at two feet asunder.

Three days passed before the miners could acquire any degree of expertness in driving the gallery through the sand; but after that period they penetrated and completed 16 feet in 24 hours with ease, even when the gallery had extended to the length of 80 feet; the work was then discontinued.

18th *August.*

Since the suspension of the siege, a blockade position, taken up on the heights of St. Bartolomeo, had been strengthened by works. Its right rested on the cliff at the French redoubt, and its left on the angular point where the valley runs up at the bend of the Calcada, or high road. The convent of Antigua, on a rock at the bottom of the bay, was strengthened for an isolated post, and a battery for two guns was constructed between it and the heights of St. Bartolomeo, to scour the breach and isthmus. This position was now in complete order.

19th *August.*

A fleet of transports arrived from Portsmouth, having on board a division of battering train ordnance, exactly the same as to the nature and number of pieces and proportion of ammunition as the former equipment, viz.—

24-pounder guns	14
10-inch mortars	4
8-inch howitzers	6
68-pounder carronades . .	4

Total 28 pieces.

At the same time, other transports arrived from the Downs, having on board an equipment of heavy ordnance, as follows, intended originally for garrison service at Cuxhaven, viz:—

24-pounder guns, on garrison carriages, with traversing platforms.	15
18-pounder do. do.	8
10-inch mortars	4
24-pounder round shot . .	2812
24-pounder case and grape	938
18-pounder round . . .	1500
18-pounder case and grape	500
10-inch shells	380
10-inch carcasses	20
Barrels of Powder	484

Garrison carriages on traversing platforms could be of little or no use in the operation, and the quantity of round shot and shells with the equipment did not exceed a good days firing for the number of pieces; but, nevertheless, this supply of ammunition was a valuable reinforcement to the general stock, and the guns might serve to replace several of the first proportion that had suffered in their vents.

A company of Royal Sappers and Miners, instructed in their art, consisting of ninety-two rank and file also joined the besieging force from England.

20*th August.*

Working parties were sent on board the transports, to prepare to land the stores.

21*st August.*

A body of Portugueze sappers, about 100, just drafted from the militia, and who had received no instruction in their new duties, joined from Lisbon.

The artillery commenced landing the ordnance and ammunition lately arrived, and the operation continued without intermission, till all the guns required, &c. were on shore.

22*d August.*

This night four 24-pounder guns and four 8-inch howitzers were placed in battery on the right attack, and seven 24-pounder guns on the left attack.

23*d August.*

Other transports arrived from England, with a third proportion of 28 pieces of battering train ordnance, the same in every respect, as to ordnance and ammunition, as the first.

With this increase, and some supplies of shot received from the navy, the whole equipment

READING ROOM
426
SEAT No.
B12534
READER'S SURNAME (Block Capitals)
FILL IN THIS TOP

ɔw amounted to the following proportion, iz:—

l-pounder guns	56	round shot . .	40,138
		case and grape .	2,398
		spherical case .	9,199
l-pounder guns	14	round shot . .	22,081
		case and grape .	1,100
		spherical case .	4,500
-inch mortars	16	common shells .	5,317
		carcasses . . .	20
nch howitzers	18	common shells .	6,224
-pr. carronades	12	common case . .	900
		spherical case .	8,100
Total	116 pieces.		

n addition, there was a Spanish 12-inch rtar, and 100 shells, brought from one of ports on the coast.

ǀarrels of powder	7,555
ǀarrels of powder in filled cartridges	500

n consequence of these increased means, the ᴗuɹhaven equipment was ordered to be as little used as possible.

Some field-brigades were moved to Tolosa, in order that the artillery-men belonging to them might be employed at the siege; the field-artillery of the left column remaining complete, to be ready to act with their respective divisions, should any attempt be made to relieve the place.

This night four 24-pounder guns, and four 68-pounder carronades, were put into battery on the right, and six 18-pounders on the left of the attack.

24th August.

The entire of the trenches being again occupied, the siege recommenced with activity.

On the isthmus, batteries Nos. 5 and 6, for thirteen guns, to breach the face of the left demi-bastion and the curtain above it, at 700 yards distance, were commenced; and on the right the batteries were enlarged to contain seven additional howitzers, four 68-pounder carronades, twenty-one 24-pounders, and sixteen mortars, making a total of forty-eight pieces of ordnance.

The only material change of position was the advancement of the greater part of the breaching ordnance about one hundred yards, to battery No. 15, it having been found rather too distant in No. 14, at the late attack, to batter with full force and precision.

Two shafts were also commenced, to form galleries, and prevent the garrison mining under the advanced works on the isthmus.

At midnight, the garrison made a sortie, entered the advanced part of the trenches with a loud huzza, and carried confusion into the parallel. In attempting, however, to sweep along its right, they were checked by a part of the guard of the trenches, and obliged to retire, carrying off with them about a dozen prisoners.

This night eleven 24-pounders and one 8-inch howitzer were put in battery on the right, and two 8-inch howitzers on the isthmus, with two more 8-inch howitzers in reserve in the rear of the battery.

25th August.

The additions to the several batteries were so far advanced as to admit of their armament being completed this night. One 12-inch and five 10-inch mortars were mounted in battery No. 13.

26th August.

The following were the names of the officers and the number of the gunners employed, the armament of the batteries, the orders for the direction of their fire, and the general arrangements for the Artillery Duties.

Royal and King's German Artillery,	Non-commissioned officers and gunners,	494
Portugueze Artillery,	do.	187

Seamen from H. M. ships. These however were much diminished after the first three days . .	80
	761

Officers Names.

Lieutenant Colonel Dickson, commanding.

BRITISH AND GERMAN.

Lieut. Col. Hartman, K. G. L. { in charge on the Isthmus.

Left of the Attack.

Captain Morrison
——— Power
——— Deacon
Lieutenant Johnstone
——— Heron
——— Mielman, K. G. L.
——— Shaw
——— Oldham
——— Stanway
——— Story
——— Goeben, K. G. L.
——— Macbean
——— Hartman, K. G. L.

Right of the Attack.

Lieutenant Colonel Frazer
Major Buckner
—— Dyer
—— Sympher, K. G. L.
—— Webber Smith
Captain Douglas

Right of the Attack—*continued.*

Captain Greene
——— Parker
——— Daniel, K. G. L.
——— Charles Gordon
Lieutenant H. Blachley
——— Ord, Brigade Major
——— James Wood
——— Mainwaring
——— Robert Harding
——— Blumenback, K. G. L.
——— Phillips
——— Pascoe
——— Robert Manners
——— Dennis
——— Morgan
——— Slade
——— Hough
——— Hutchins
——— Bloomfield
——— Palliser
——— Williams

PORTUGUEZE ARTILLERY.

1 Major and 11 Lieutenants.

ROYAL NAVY.

Lieutenant Dowell O'Reilly
——— Dunlop

Mr. Marsh
— Harvey
— Bloye
— Lawson

Detail of the Batteries.

LEFT OF THE ATTACK.

No. 5.	18-pounders	6	Established in the redoubt of St. Bartolomeo. These thirteen guns to breach the face of the left demi-bastion, and the curtain above it, in order that a practicable ascent may be obtained to the former, and from thence to the top of the curtain.
6.	24-pounders	7	
	8-inch howitz.	2	For general purposes of annoyance
	Total	15	

RIGHT OF THE ATTACK.

	No. 11.	8-inch howitzers	2	Mountain battery to be employed in the same manner as before.
Late gun battery of same number.	13.	12-inch mortars	1	To keep up a fire on the rear of the breach, and against the defences of the town and castle.
		10-inch do.	5	

Late breaching battery.	No. 14.	8-inch howitzers	5	Guns to breach. Carronades, and howitzers on right of battery, to enfilade the curtain and land front.
		68-pr. carronades	4	
		24-pounder guns	6	
Late carronade battery increased by five embrazures to the right and six to the left.	15.	24-pounder guns	15	To breach.
		Total	38	
	16.	10-inch mortars	4	Against land front and castle.
		Total	42	
	17.	10-inch mortars	6	As soon as landed to act against land front, the town and castle.
		General Total	48	

making a total of 63 pieces at both attacks.

Lieutenant Colonel May having been ordered to head-quarters, Lieutenant Colonel Frazer was charged with a general superintendence, under the commanding officer.

The batteries on the right were placed under the command of field officers, who relieved each other daily, according to the following arrangement.

Great breaching battery	No. 15.	Major Buckner and Major Sympher.

Battery . .	No. 14	Major Dyer and Major W. Smith.
Mortar batteries	. .	Major Arriaga.

Every thing being in readiness, the batteries opened with a general salvo at 9 A. M., by signal from No. 11, with fifty-seven pieces of ordnance, viz. forty-two on the right and fifteen on the isthmus.

On that side the thirteen guns were directed to breach the left demi-bastion of the main front, and the left of the high curtain over it, as also the face of the left demi-bastion of the horn-work, which were all seen in a line one above the other. *See Section, Plate XII.*

The fire of the batteries on the right was directed to complete the destruction of the two towers A. and B. on each flank of the first breach, to continue that breach to the salient angle of the left demi-bastion of the land-front, and to breach the end of the high curtain above it.

The effect of the breaching batteries on the right was most satisfactory. In the evening the revetement of the demi-bastion as far as the salient angle was entirely beaten down, and the towers and intervening wall were in a very ruinous state.

The thirteen guns in Nos. 5 and 6 on the left were not equally successful in the objects they were directed against, on account of the great distance which they were from the body of the place. The face of the left demi-bastion of the hornwork was a good deal ruined by their fire, but those batteries neither had force or precision sufficient to make any rapid impression on the face of the demi-bastion of the main work or the high curtain.

Marquis Wellington this day inspected the operation from the sand-hills on the right of the Urumea, and observing the want of effect of the fire of the batteries from St. Bartolomeo, sent orders for a battery to be constructed in front of the ruined houses on the right of the parallel on the isthmus, and when ready to be armed with six 24-pounders from No. 6.

This order, however, was afterwards modified to four guns, as Sir Rich. Fletcher was desirous to retain as much as possible the commanding fire from the height of St. Bartolomeo, in consequence of its sweeping along the rear of the sea line.

Night between 26th and 27th August.

In consequence of the before-mentioned arrangement, No. 7 battery, at 300 yards distance from the left bastion of the main front, was commenced. It saw the revetement of the face of the demi-bastion and that of the high curtain over it very perfectly.

It being reported that, notwithstanding the extreme vigilance and alertness displayed by the blockading ships, craft laden with ammunition constantly entered the harbour, this night, the boats of the squadron, commanded by Lieutenant the Honourable James Arbuthnot of the Surveillante, with a detachment of 200 infantry under the command of Captain Cameron of the 9th regiment, attended by Captain Henderson of the royal engineers, surprized, and after some resistance, gained possession of the rocky island of Santa Clara, off the entrance of the harbour, on which the garrison maintained a post of an officer and twenty-four men, who were taken prisoners.

The assailants lost Lieutenant Chadwick, assistant engineer, and two men killed and six wounded.

As the island of Santa Clara enfilades and sees in reverse the defences of the castle, it was decided to construct a battery upon it for those purposes.

The garrison kept up some fire this day, but much less than at the commencement of the attack.

27th August.

The fire was continued as yesterday without intermission, and the breaching batteries on the right made good progress towards effecting the objects intended.

On the left the batteries made some impression on the face of the demi-bastion and high curtain; but the revetements remained standing perpendicularly to their summits.

The two shafts on the right of the isthmus, commenced on the 24th, were sunk nine feet, and a commencement made for the galleries of about three feet. The soil was loose sand, and the principal labour consisted in applying the frame work and conveying the sand to the surface.

It was found necessary on commencing a gallery, to cut a notch in both sides of the excavation, into which the ends of a strong plank were inserted and propped up with supporters, after which the sand was excavated from under the plank, and the regular frames applied: this was repeated on each advance, taking care to support the roof and sides previously to removing any great body of sand, as it only held together whilst moist. Whenever, through inattention, this precaution of supporting the sand inch by inch on every advance was neglected, it invariably crumbled down and caused great labour and delay to clear the gallery.

Night between 27th and 28th August.

The garrison made a sortie against the right of the approaches on the isthmus; but profiting by past experience, such precautions had been taken of forming good banquettes to the parallel, posting sentinels, &c., and the guard were kept so prepared to stand to their arms, that the assailants were immediately repulsed with the bayonet without effecting the slightest mischief; notwithstanding that, favoured by the obscurity of the night, and the vicinity of the place, they had reached the crest of the parapet before a musket could be fired. (35)

No. 7 battery on the isthmus being nearly completed, an attempt was made this night to take into it four 24-pounder guns from No. 6, but the working party employed proved unequal to the task, from the badness of the communication and the interruption occasioned by the sortie, and in consequence they were obliged to deposit the guns at day-light under cover of the approaches.

28*th August.*

The fire from the breaching batteries on the right was continued as before with unremitting vigour, and the whole space to be breached appeared practicable, with the exception of tower B, which was still standing, though in a very ruined state, and a gun could be discovered in it flanking the breach. The breach in the end of the high curtain was still far from practicable.

On the left, the batteries with three 24-pounders and six 18-pounders, had effected a breach in the face of the left demi-bastion of the hornwork; but the revetements of the face of the demi-bastion of the body of the place and the high curtain had not given way.

The fire of the howitzers, carronades and mortars, was kept up with such vigour as nearly to silence the artillery of the place.

The spherical case from the carronades appeared to have very great effect, and it was afterwards ascertained that the garrison suffered much from this species of ammunition. At this time they endeavoured to retaliate the annoyance on the besiegers, and with that view fired shells filled with small balls, to burst over the heads of the troops, but which produced no effect.

The trenches on the isthmus were improved by the addition of good musketry parapets and banquettes, as fast as fascines and gabions could be procured; but the supply was in no degree commensurate with the demand for them, in consequence of operations having commenced before any depôt had been formed. Four hundred Portugueze were now constantly employed on this duty, who worked well and diligently. Indeed the Portugueze were always found particularly useful, intelligent, and even industrious, in this or any other handicraft employment. The party making fascines at this time would have met every demand had means existed of carting the materials from the woods, which, however, being effected by manual labour, occupied fully three fourths of the workmen.

The Marquis Wellington came over and gave directions for the further operations of the attack.

At night the sap in front of No. 7 battery was pushed a short distance by means of the sappers placing and filling a row of gabions, and the working party immediately perfecting the trench. The garrison scarcely fired on the sap, which would have been carried much further, had not the sappers been completely worn out by three successive nights' employment.

The three 24-pounders, which the working party failed in getting into battery No. 7 last night, were moved forward and placed in readiness to open in the morning, but an accident prevented the fourth gun being run in.

29th August.

It was arranged to have five 24-pounder guns and one 8-inch howitzer in the battery on the island of Santa Clara, to enfilade the back of the castle, and measures were taken by the artillery for sending the guns and carriages to the island.

On the right the efforts of the breaching batteries were directed totally to demolish the tower B, and to breach the end of the high curtain, both which objects were fully effected by the evening. The gun behind tower B was dismounted and destroyed, as also was one that stood exposed amongst the ruins of tower A.

By desire of Sir R. Fletcher, several guns were directed against the glacis scarp of the left branch of the hornwork, to try and shake down some mines the garrison were thought to have established there. The firing, however, was not to be carried to the extent of bringing down the wall, so as to diminish the screen it would afford to the columns whilst advancing to the assault.

This fire was continued for a considerable time, so as to shake the wall considerably, but it had not the desired effect of destroying the mines as it appeared afterwards.

On the left, battery No. 7 opened with three guns in conjunction with battery No. 6, against the face of the demi-bastion and high curtain, and the increased effect of the guns in No. 7, in consequence of their nearer approach to the wall, soon became evident.

The garrison appeared very jealous of this battery, and directed several guns from the castle works against it, which occasioned some casualties. One of the 24-pounder guns in the course of the morning was struck by a shot, which split the gun and rendered it unserviceable; but Captain Morrison, who opened the battery, kept up such a rapid fire with the other two guns, that in the evening, assisted by the guns of No. 6, the breaches they were forming wore a very favourable appearance. During the day several of the 18-pounders in No. 6, as well as the mortars on the right attack, had been directed against the castle defences, and in the course of the afternoon the garrison ceased to fire from their batteries.

One of the infantry brigades having been withdrawn, it became a source of uneasiness lest the garrison should make a sortie during the night and spike the guns in No. 7. In order, therefore, to guard against such a misfortune, the artillery officers took measures for their security by fastening an iron plate over the vents locked on by a chain, which would have occasioned some delay in spiking them, even if attempted by experienced artillery men. They also resorted to similar measures for the safety of the breaching batteries on the right, which being almost unsupported by a parallel, and having only a small guard for their protection, were much exposed to danger should the garrison show any enterprize; for, the Urumea being perfectly fordable at low water, to cross and spike the guns and return back into the place would only have been the work of a few minutes.

The circumstance of the river being no protection to the batteries, was first made known to the besiegers by Captain Macdonald of the artillery, who, of his own act, waded across the stream in the night at low water, to the foot of the breach C, and along the front of the rampart wall to the battery de la Brecha.

In the course of this day, the remainder of the 10-inch mortars, six in number, were placed in No. 17 battery on the right, making in all 16 mortars. It was intended to have brought forward 17; but a 10-inch mortar dropped out of the slings into the harbour, in the operation of transferring it from the transport to the boat, and buried itself so deeply in the mud, that it could not be raised.

The trenches on the right of the isthmus were now rendered very good and very wide, with high parapets having loop-holes through them formed with sand-bags; and the sea wall was broken through for ready access to the beach.

The garrison keeping up very little fire, the sap on the left of No. 7 battery was continued throughout the day by a mixed nature of flying and full sap.

Night between 29*th and* 30*th August.*

A false attack was ordered to be made on the breach at 10 P. M., with the hope of inducing the garrison to blow up their mines, and to show the nature and extent of the fire they would be able to bring on an assaulting column. Three distinct musket shots, discharged from the right of the parallel, were to be signals for the breaching batteries to commence firing with the greatest violence on the breach till the bugles should sound the advance, when they were to change the direction of their fire to the right of the breach. This was done, and small parties moved forward from the trenches as if to assault; but though there appeared to be considerable alarm in the place, the defenders of the breaches were too cool and steady, and their preparations were too well organized for the measure to be successful to the extent of inducing them to explode their mines.

This night, the remaining 24-pounders that could not be got in last night, were moved into No. 7 battery on the isthmus.

30*th August.*

The fire of the breaching batteries on the right was continued against the breaches for a short time this morning, till the breaches appeared good and practicable. The guns were then turned against the defences in general, and all the mortars and howitzers were directed against the Mirador and castle batteries.

The parapet of the flank de la Brecha was demolished, and the right flank of the cavalier or flat bastion considerably injured, and as much as could be seen of the entrenchment *e*, across the ditch of the land front was also demolished.

On the left, three 24-pounders in No. 6 and three 24-pounders in No. 7 continued their fire with such effect against the face of the demi-bastion and the high curtain, that the whole was made fully practicable, forming one great breach in conjunction with that effected by the batteries of the right attack, which measured above 500 feet in front. (34)

Three of the 18-pounders in No. 6 were employed during the whole day in perfecting the breach in the face of the left demi-bastion of the hornwork, and the other three 18-pounders were directed against the palisading.

The battery on the island, No. 10, was completed and armed with one 24-pounder gun and one 8-inch howitzer.

30*th August*.

This afternoon, at 3 o'clock, Marquis Wellington inspected the breaches, which appearing to be good and practicable, he decided that the assault should take place at 11 A. M. the next day, when the tide would have fallen sufficiently to admit of the troops passing under the wall of the left branch of the hornwork to the breaches; and in consequence, it became time to prepare the necessary debouches for the troops. To break through the sea wall, between the left salient angle of the hornwork and the trenches, which was of masonry, 4 feet thick, and 10 feet above the level of high water, three shafts were commenced in the advanced sap in front of No. 7, in a line perpendicular to the wall. The first was placed close at the back of the wall, the second 25 feet from the wall, and the third 40 feet from the second; when sunk 8 feet below the surface of the ground, a small return was made to contain the powder, and each was loaded with 540 pounds of powder.

31*st August.*

A 2 A. M. the three mines were sprung, and blew the sea wall completely down. The diameters of the etonnoirs were about 30 feet, which were immediately connected, and by 10 A. M. formed a good passage out for the troops, and accomplished the original object of securing all the works in their rear from the effects of any galleries the garrison might have run out to form mines in that direction.

In front of the mouth of the main trench, in advance of No. 7 battery, a traverse was formed of a double row of large gabions 6 feet high by 3 feet in diameter, with the view of screening the opening from the grape shot fire from the castle.

There was no casualty on the right from the fire of the place in the course of this day.

ARRANGEMENTS FOR THE ASSAULT.

Sir Thomas Graham in person directed the general operations from No. 15 battery on the Chofre sand-hills; but the immediate command of the troops to be engaged in the assault was confided to Lieutenant General Sir James Leith. This force consisted of the 750 volunteers from the army generally, with Major Generals Robinson's, Hay's and Spry's brigades, of the 5th division, and the 5th Portugueze caçadores.

The orders were for the right column to form a lodgment on the summit of the breach A B as soon as the troops should drive back the defenders; but the left column, on carrying the high curtain, was to advance to the traverse next the cavalier flat bastion in the centre, and pour such a fire on the hornwork as should drive away the defenders, and admit of a communication being carried from the approaches along its covered-way into the place.

A battalion to be embarked in the boats of the squadron to make a diversion in rear of the castle, but not to attempt to land.

In consequence of a dense fog, and there being no air to carry off the smoke, it was past 8 A. M. before the artillery could distinguish objects sufficiently to direct their fire with effect. At that hour all the batteries opened on the defences, and on working parties of the garrison employed in rear of the breaches, and continued open till the moment of the assault. They could not now, as had been arranged at the former assault, fire on the collateral defences in aid of the troops, in consequence of every part seen from the batteries being practically breached; but they were ordered to maintain a fire on the artillery of the place. Parties of selected riflemen were also thickly strewed along those parts of the right of the trenches on the isthmus, that bore on the left of the hornwork, at distances from 100 to 150 yards, with orders to keep a constant but well directed fire on the defenders, particularly on those posted along its left branch to fire on the breach.

EXECUTION OF THE ASSAULT.

At eleven A. M., being rather more than an hour before low water, the columns for the assault filed out of the trenches by the opening in front of No. 7, and by that last formed by the mines. The distance to the breaches was 180 yards; but the tide having ebbed for some time the rocks were no longer slippery, and there was a good breadth of strand between the river and the works of the place.

Immediately on the advance of the assailants the garrison exploded two mines, exactly under the salient angle of the covered-way of the left demi-bastion of the hornwork, which blew down a considerable portion of the high retaining wall next the sea, and killed or buried 20 or 30 of the assailants. Happily the troops were not yet formed in close order, nor very near the wall, or their loss must have been much greater.*

Notwithstanding this explosion and a general fire which immediately followed, the advance reached the breach A B in the best order, and gallantly ascended to its crest; where, however, they were met with such destructive discharges of musketry from a parallel retrenchment as nearly annihilated the foremost ranks.

Both officers and men, however, nobly persevered, in the attempt to close with their opponents; but it was soon discovered (see *Sections* 1, 2, and 3, *Plate XII.*) that the rampart along the interior of the breach was retained by a wall from 15 to 25 feet in depth, at the foot of which was arranged every nature of defensive obstacle, that all communication along the rampart or parapet by the flanks of the breach was cut off, and that the only possibility of descending into the town was by means of some portions of the walls of the ruined buildings, which, at a few points, united with the high retaining wall at the back of the breach. Further, this descent and the summit of the breach were closely exposed to a well covered fire of musketry from loop holes formed in the walls of the ruined buildings at the back of the breach.

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* These counter-mines were rather prematurely exploded, supposed to have been occasioned by the unexpected appearance of a serjeant and 12 men, who volunteered, on the signal being given for the assault, to rush into the covered-way, jump into the ditch, and cut the saucisson. It is probable that these brave fellows were all destroyed by the explosion, as not one of them ever returned.

Every point from which the approach to the breaches could be seen, (except the tower of Amezquita on their left,) was strongly manned with infantry, who poured a destructive fire of musketry on the assailants; whilst the batteries, but more particularly the Mirador and del Principe in the castle, kept up an incessant fire of grape and shells.

The breach at the end of the high curtain was evidently accessible to the terre-pleine; but immediately in its rear a defensive traverse presented a second obstacle, and gave a close and direct fire on the summit of the breach; added to which, the left branch of the hornwork poured a tremendous flank fire on the ascent.

This bastion was, notwithstanding, the most favourable point of attack, and many desperate efforts were made to rush up, the officers showing a noble example of intrepidity and devotion in leading the assailants; but the defensive traverse not being more than fifteen yards distant from the crest of the breach, and being strongly occupied by grenadiers who fired with rapidity and steadiness, every one that gained the rampart was immediately killed or wounded; whilst the dense mass of men at the foot of the breach were fast falling under the close musketry directed on them from the left branch of the hornwork.

At the breach between A and B similarly gallant efforts were persevered in, but the fire from the entrenched ruins carried destruction to all who gained the summit till the loss was quite appalling. The sappers and working parties long persevered with cool intrepidity in endeavours to form cover on the face of the breaches; but in vain, for the surface being formed of loose stones, and no stuffed gabions, woolsacks, or other artificial means, being brought up, the close fire of musketry picked off the workmen in rapid succession before they could cover themselves, till the attempt was abandoned.

Fresh troops to replace the casualties and feed the attacks were sent on by Sir Thomas Graham with most laudable perseverance, as fast as they could be filed out of the trenches, till at length more than half the 5th division and the whole of the volunteers, who shone conspicuously amongst the bravest, were engaged on the breaches, or lying wounded at their foot.

The reinforcements, in passing the opening of the ditch of the main front, were much cut up by two guns at *e*, which fired uninterruptedly during the assault, and also by grape shot from the left of the curtain, which almost enfiladed the approach from the trenches to the breach; but otherwise the artillery of the place was well kept under by the besieger's batteries, and the besieger's mortars played with good effect on the reserves of the garrison in the great square, and on their points of assembly in rear of the trenches.

Nearly two hours of desperate exertion had passed without producing any effect, and there was every reason to fear the resistance would be prolonged till the rising tide should oblige the assailants to retire, (it being now on the turn,) when a detachment of Portugueze, under Major Snodgrass, was ordered to ford the Urumea from the right of the attack, which they did in beautiful order, under a heavy fire of grape from the little flank of St. Elmo, and of musketry from the walls of the town, and assaulted the breach C. This column was immediately followed by a second, under Colonel Macbean, which passed the river in equally good order and reinforced the assailants at the main breach.

These fresh efforts, however, produced no effect beyond feeding the attack; the garrison retained all their posts and kept up as destructive a fire on the assailants as at the commencement of the assault, and success seemed more than doubtful.

In this almost desperate state of affairs Sir Thomas Graham, having consulted with Lieutenant Colonel Dickson, ordered that the whole artillery of the breaching batteries of the Chofre sand-hills should, as far as possible, be brought to bear on the high curtain above the breach in the demi-bastions, and in a few minutes the fire of 47 guns, howitzers, and carronades, was directed with such effect on the traverse, that the garrison (who encouraged by the success of their efforts had recently become more bold and forward) were obliged to retire from its effects behind more distant cover, and to slacken their musketry fire.

The artillery, from five days continued firing, knew the range precisely, and the practice against the high curtain was admirable; for although the shot passed immediately over the troops on the face and at the foot of the breach and swept amongst the defenders of the curtain, it occasioned no casualties among the assailants. No. 7 battery on the isthmus also fired from three guns with great effect on the left demi-bastion, and ricocheted along the interior of the breach beyond tower B. The riflemen in the advanced trench on the isthmus also seized this opportunity to fire over the assailants, and picked off many of the defenders of the demi-bastion.

In about twenty minutes after this measure had commenced, the whole of the numerous fire barrels, live shells, hand grenades, and other combustibles, which the garrison had arranged along the ramparts for the close defence of their traverses and interior works, caught fire, and igniting in succession caused a number of explosions along the whole extent of the high curtain, killing and wounding many of the defenders, and throwing the others into the greatest confusion.

The assailants took immediate advantage of this explosion to renew their efforts, and a vigorous rush rendered them masters of the first traverse. The garrison, however, returned to the charge, when a fierce conflict ensued; but the assailants increasing in numbers on the high curtain soon drove them back. The garrison then abandoned the ravelin and left branch of the hornwork and withdrew from the retrenchment of the breach A B; on which the assailants at that spot lowered themselves down by the ruins, or moved by their left to the high curtain of the land front.

The Portugueze detachment, after some resistance, forced in at the same time by breach

C; and the remainder of the assaulting force entered in rapid succession at one or other point, and vigorously followed up their success, under a most awful storm of thunder, lightning, and rain.

The principal square and every street presented a succession of retrenchments, but the garrison, dispirited at their previous loss, and being instantaneously attacked in every direction with vigour and determination, were scarcely able to make a momentary stand on any point; and 700 having been made prisoners, the remainder took refuge in the castle and the convent of St. Teresa. (36)

At 3 P.M., the assailants being in complete possession of the town, a communication was made from the left of the parallel on the isthmus to the salient angle of the ditch of the ravelin, and through the counterscarp to the main gateway, so as to have an unmolested passage in and out.

This assault cost the besiegers more than 500 killed and 1,500 wounded, and accident only prevented their loss being much greater, as a mine had been formed by the garrison under the breach at B, having a saucisson led from the chamber to the retrenchment. This saucisson must have broken accidentally at the moment of the assault, as an end of it hanging down from the retrenchment, caused the discovery of the mine. On excavating to the chamber it was found charged with 12 cwt. of powder, which quantity, if exploded, must have caused the destruction of the whole body of the assailants at that breach.

The only officers of rank killed were Lieutenant Colonel Crawford and Majors Kelly, Rose, and Scott; but amongst the officers wounded were Lieutenant General Sir James Leith, Major Generals Oswald and Robinson, Lieutenant Colonels Hunt, Cameron, Piper, and Hill, and Major Campbell.

The engineers had to regret the loss of Lieutenant Colonel Sir R. Fletcher, Bart. shot through the heart, Captains Rhodes and Collyer, killed on the breaches; and Lieutenant Colonel Burgoyne, Lieutenants Barry and Marshall, and 29 rank and file of the corps of Royal Sappers and Miners, wounded.*

On inspecting the defences, it was found that the tremendous enfilade fire on the high curtain, though only maintained for twenty minutes, had dismounted every gun but two. Many of these pieces had their muzzles shot away, and the artillery-men lay mutilated at their stations. Further, the stone parapets were much damaged, the cheeks of the embrazures knocked off, and the terreplein cut up and thickly strewed with headless bodies. In short, the whole land front had, from the effects of the cannonade, been rendered a scene of destruction, desolation, and ruin.

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* It was subsequently ascertained that the garrison at the moment of this assault mustered 2,004 effective bayonets.

At the conclusion of the assault fires broke out in various parts of the town; but from the indiscipline which follows such hard-fought actions, and the castle continually firing on all who showed themselves in the streets, little or no exertion could be made to extinguish the flames.

DESCRIPTION AND REDUCTION OF THE CASTLE.

The Castle of St. Sebastian, generally used to designate Fort La Mota only, situated on the summit of the cone, should rather be applied to the whole of the rocky promontory at the northern extremity of the town; as by means of the retrenched convent of St. Theresa on its right, and various loop-holed walls connecting the masonry batteries on its face, the whole has been formed into one post. These lower defences are more calculated to guard against a popular tumult than to resist regular troops with cannon; but Fort La Mota, of five unflanked sides, has such high scarps as to be secure from assault, and its masonry is of a thickness and strength to require much battering to bring it down.

It is, however, very small, almost destitute of bomb-proof cover, and very insufficiently and insecurely supplied with water.

The Duke of Berwick, in 1719, found it so impracticable to carry approaches up the face of the mountain, on account of its rocky nature and extreme steepness, that not daring to storm the upper works, he spent nineteen days in bombarding them before he could induce their surrender. The French garrison, however, being now entirely dispirited with its recently great loss, and the besiegers being highly confident from recent success, the bolder measure of injuring the defences by a cannonnade, and then giving a general assault, was contemplated.

1*st September.*

Marquis Wellington visited the trenches this morning, and gave his sanction to the details of an operation which, in addition to trying the effects of a powerful bombardment to induce an immediate capitulation, consisted in erecting batteries on the works of the town, to breach most of the main points of the castle defences, as the battery de-la-Reyna, the Mirador, and the Keep, as well as the thin loop-holed walls connecting them, so as to deprive the garrison of all chance of successfully resisting an assault should they be inclined to push matters to such extremity.

A fire of mortars, and occasionally of guns, was kept up against the castle.

2d September.

A vigorous fire was kept up by the mortars all this day against the castle, and apparently with good effect.

3d September.

The mortar and howitzer fire continued till 12, when a flag of truce was sent in, and a discussion for surrender took place, which was broken off, however, by General Rey.

The mortar fire was now kept up day and night.

At dusk a battery, No. 8, for three guns, was commenced on the isthmus near the circular redoubt, and also battery No. 9, for seventeen guns, occupying nearly the whole length of the terreplein of the hornwork.

This night fifteen 24-pounders were drawn out of battery No. 15, on the right of the attack, in readiness to be sent across the Urumea.

4th September.

The town, which, as has been stated, caught fire during the assault from the quantity of ammunition and combustibles of all sorts scattered about, was now generally blazing, and the fire became a great impediment to carrying the approaches forward.

A moderate mortar fire was kept up on the castle, with occasionally a general salvo of all the mortars.

It was intended to have taken the guns over the Urumea early last night at low water, but the wind having caused the tide to flow faster than was expected, only one gun could be got across. To avoid further delays, therefore, and the difficulties experienced in working in the water in the dark, the artillery determined to take the guns across by day-light as soon as the tide would serve; and the operation was effected this morning without inconvenience, the garrison not firing a shot, though the passage was effected in view of all their works.

Indeed, so inadequate was the quantity of ammunition in the place for so protracted a siege, that unless the garrison had received almost nightly supplies by boats from the neighbouring ports, it is probable that at this time it would have been all exhausted notwithstanding the sparing use made by General Rey of his artillery.

5th September.

Mortar fire as yesterday.

At night the fifteen 24-pounders brought across the Urumea, and two brought from No. 6, were moved into the ditch of the hornwork.

Three 18-pounders were brought from No. 5 on the left of the attack and mounted in No. 8.

6th September.

Another 24-pounder was mounted on the island, and there would have been a third, had not its travelling carriage been lost in the surf in landing.

The mortar fire was kept up with greater briskness.

During the night the seventeen 24-pounder guns were put into battery in the hornwork.

7th September.

A warm fire of mortars was kept up throughout these twenty-four hours.

Every arrangement was completed to open the new batteries handsomely on the morrow.

The garrison having fired very little since the loss of the town, it had been found practicable to prepare the roofs of the unburnt houses and churches for the reception of infantry to fire on the castle defences should they be assaulted.

8th September.

At 10 A. M. every thing being in readiness the batteries opened as follows against the castle.

LEFT OF THE ATTACK.

No. 7, . . .	3	24-pounder guns	To breach the Mirador.
No. 8, . . .	3	18-pounder guns	Against battery de-la-Reyna.
No. 9, . .	17	24-pounder guns	To breach Mirador and battery de-la-Reyna.
Nos 10,	2 1	24-pounder guns 8-inch howitzer	Against lower defences of castle and to enfilade the back of the hill.

Total 26

RIGHT OF THE ATTACK.

No. 11, . .	2	8-inch howitzers	Against Mirador.
No. 13, . .	1 5	12-inch mortar 10-inch do.	Against the rear of the castle.
No. 14, . .	5 4 6	8-inch howitzers 68-pr. carronades 24-pr. guns	Guns against Mirador, the other ordnance against castle.
No. 16, . .	4	10-inch mortars	Against the castle generally.
No. 17, . .	6	10-inch do.	

33

Add 26 on left of the attack.

Total 59 pieces.

The fire commenced from all points at the same moment, and was so extremely rapid and well directed, and of so overpowering a nature, that the castle scarcely returned a single shot. After about two hours firing, a great impression being made on the wall of the Mirador and of battery de-la-Reyna, the governor beat the chamade, and after some negociation agreed to surrender his garrison prisoners of war. As a preliminary measure he was directed to deliver up the Mirador and battery del Gobernador, which posts were taken possession of at 4 P. M.

The officer of engineers made prisoner on the breach, who was at this time lodged in the castle, represents the effect of this concentrated fire to have been irresistible, tearing up or destroying every thing opposed to it. The space within Fort La Mota being extremely small, and much crowded with men, the loss of life was very great, and the garrison generally sought shelter in narrow trenches excavated along the face of the hill. The English prisoners in the castle suffered in still greater proportion than the garrison; for the officer charged with their custody, feeling irritated at the loss his friends were sustaining from the bombardment, refused them the permission they solicited to throw up cover for their own protection, and they remained exposed to all its fury.

When battery No. 9 in the hornwork opened against the castle, the vents of the guns were all so much enlarged, that it was necessary every round to place a piece of paper over the vent with a small hole in it, to serve as a shoulder for the tube, to prevent it falling into the gun. By this simple expedient the guns were fired during the bombardment with almost the same ease and rapidity as previously to the enlargement of their vents.

9th September.

This morning the garrison, which consisted of 80 officers and 1756 men, marched out with the honours of war, and laid down their arms, leaving, however, 23 officers and 512 men of their number in the hospital. Immediately after this the Spanish flag was hoisted, and saluted with 21 guns.

The loss of the besiegers during the operation was,

	Officers.	Men.
Killed	53	898
Wounded	150	2340
Missing	7	332

The loss of the artillery during the second period of the attack was,

	Killed.			Wounded.		
	Officers.	Non-commissioned Officers & Gunners.	Total.	Officers.	Non-commissioned Officers & Gunners.	Total.
Royal Artillery	. .	6	6	1	17	18
King's German do.	. .	. .	. .	. .	4	4
Portugueze do.	. .	1	1	. .	4	4
Seamen	. .	. .	. .	. .	5	5
Total	. .	7	7	1	30	31

Lieutenant Hugh Morgan severely wounded from the castle.

Total officers and gunners killed and wounded during the siege.

	1st Operation.	2d Operation.	Total.
Killed	12	7	19
Wounded	44	31	75

General Total 94

RETURN of AMMUNITION expended during the Siege, showing the Quantity expended during each Period of the Attack.

	First operation.	Second operation.	Total expenditure.
24-pounder Round Shot . . .	15,350	28,017	43,367
18-pounder do do. . . .	5,034	4,269	9,303
24-pounder Grape and Case .	718	1,376	2,094
24-pounder Spherical do . . .	1,434	496	1,930
18-pounder do. do. . .	. . .	150	150
10-inch Common Shells . . .	503	3,252	3,755
8-inch do. do. . . .	2,836	4,930	7,766
8-inch Spherical Case . . .	1,676	522	2,198
8-inch Common do. . . .	168	. . .	168
12-inch Shells common . . .	. . .	100	100
Total Rounds of Shot and Shells . . .	27,719	43,112	70,831
Barrels of Powder, 90lbs each . .	2,095	3,484	5,579

The Engineers expended,

Gabions	2,726
Fascines of 18 feet	1,476
Sand-bags . . .	20,000
Disbursements for working-pay of artificers, making fascines, gabions, &c.	£1,800

OBSERVATIONS

ON THE FOREGOING ATTACK IN COMPARISON WITH A REGULAR SIEGE.

It being premised that the very small means in ordnance and ammunition available in the first instance for this siege necessitated a summary mode of proceeding, and that the plan adopted had the peculiar merit of directing the total of those means to the main chance of success; and also of combining, in an eminent degree, decision and enterprise with rapidity of execution, so as to reflect the highest credit on the proposer, it may be permitted, for the sake of fixing principles, to draw a comparison between its duration and consequences, with the probable results of a regular and scientific attack.

In attempting this comparison, as it must ever remain matter of opinion, whether more determined conduct during the assault on the 25th of July would have carried the breaches, or only led to a still greater loss of the assailants, that operation shall not be separately considered. But the second part of the attack having been carried on with a force of artillery sufficiently great for all purposes of destruction and annoyance, and the breaches having been made of most unusual size, the two periods of the operation conjointly, and the gallant achievement with which they closed, may fairly be regarded as forming a specimen of a hurried attack, carried on under the most favourable circumstances.

In analyzing the Journal for its merits or demerits, we find a period from the 11th to the 25th July, being fourteen days, occupied in the first part of the operation, which failed; and from the 23d to the 31st August, eight days, occupied in the second part of the operation, making together twenty-two days open trenches for the town, and thirty days for the town and castle; besides an intervening month of blockade. Further, after this long period of open trenches, the formation of breaches of two or three times the ordinary dimension, and the expenditure of 70,000 rounds of ammunition, success remained doubtful till the final moment; and was only obtained by successive spirited efforts of the assailants, and a perseverance under severe loss not to be expected from ordinary troops.

Summary of the attack. Thirty days open trenches, thirty days of blockade, 3,500 officers and men killed or wounded, 70,831 rounds of ammunition expended.

In contrasting with this summary the probable duration and loss of a scientific attack, it is assumed that the besiegers have at command an abundant proportion of ordnance and ammunition, sappers and miners, stores and materials, and that they work forward with spirit and skill.

At St. Sebastian's, the defences liable to be regularly attacked, consist of a front of fortification covered by a hornwork of small dimensions and acute angles, with a scarp only 23 feet high, and destitute of countermines, bomb-proof cover, or any chicanery of defence.

The main front in rear of the hornwork is very defective in its trace, and its escarpes are much exposed. It is also commanded in front and flank at distances from four to seven hundred yards by the heights of Salamardia, St. Bartolomeo, and Antigua; commanded and enfiladed by the Chofre sand hills on its left flank, at distances from 600 to 900 yards; and plunged into and taken in reverse by the heights of Monte Olia.

When St. Sebastian was fortified in the 17th century, the fire of artillery was still so uncertain and imperfect, that these hills were deemed too distant to be hurtful, and no precautions were taken to cover or conceal the defences from their view; but the parapets, scarps and ramparts were constructed as if no such dangerous opponents existed.

In the present day, however, ordnance can from such distances utterly destroy stone parapets, plough up ramparts, dismount artillery, and batter down exposed escarp walls; and, consequently, not only the exposed branch of the hornwork, but the face of its left demi-bastion, and all the left of the land front and eastern defences of the town are liable to be knocked down or breached from distant batteries.

Indeed, judging from the very great effect produced on the land front by the fire of the batteries on the Chofre sand hills during the last assault, it may be presumed that had batteries of even less amount of ordnance been established in the first instance on those hills, expressly to enfilade and plunge into the defences on the isthmus; and had those batteries been aided by other direct and enfilading batteries on the heights of St. Bartolomeo, and in advance of them, the garrison would not have been able, after a few hours firing, to have preserved a single gun on the ramparts, or to have shown a musket over the parapets to retard the progress of the attack; in which case the approaches would have been carried forward uninterruptedly along the sandy isthmus, and a lodgement established in the hornwork almost without loss.

With respect to time, as there are no instances on record of a work of similar trace and profile to that under consideration, which has been attacked vigorously and with powerful means, having resisted above ten or twelve days, the longest of those terms may reasonably be assumed as the probable period within which a besieger might establish himself in the hornwork at St. Sebastian's.

If after the formation of a lodgement in the hornwork, such guns in the enfilading batteries on the Chofre sand hills, as would become disposable, had been turned to breach the exposed scarp of the eastern defences of the town, and ruin its parapets; whilst direct batteries on the isthmus breached the land front, and the remaining ordnance continued a fire of annoyance on the defences, the place would in four days more (making a total of fourteen or sixteen days open trenches) have had three considerable breaches in its walls, with all its flanks destroyed, its parapets knocked down, and its artillery dismounted. Further, the troops, whilst giving the assault, would have had the support of a powerful artillery, or close musketry fire from the trenches, till on the very summit of the breaches; and, under such circumstances, who can doubt but that terms of capitulation would have been demanded, or a certain and almost bloodless triumph have been the immediate consequence.

The events of the 8th September show that the castle, if vigorously bombarded from the commencement of the attack, would have given the besiegers neither trouble nor annoyance.

If the foregoing statements and reasoning be correct, the operations against St. Sebastian afford a most impressive lesson on the advantages of proceeding step by step, and with due attention to science and rule in the attack of fortified places; for the effort there made (through necessity) to overcome or trample on such restrictions, caused an easy and certain operation of eighteen or twenty days to extend through a space of sixty days, and to cost the besiegers 3,500 officers and men killed, wounded, or made prisoners, bearing strong testimony to the truth of the maxim laid down by Marshal Vauban that, LA PRECIPITATION DANS LES SIEGES NE HATE POINT LA PRISE DES PLACES, LA RETARDE SOUVENT, ET ENSANGLANTE TOUJOURS LA SCENE. (37)

RESTORATION OF THE DEFENCES.

On the embarkation of the French, a brigade of Portugueze troops marched into St. Sebastian, to form the garrison; and immediate steps were taken to clear the breaches and render the place defensible. To replenish the armament the brass guns which had drooped had their muzzles cut off, and in that state were remounted on the ramparts, in addition to thirty-five pieces of ordnance from the battering train.

25th September.

A body of Spanish troops arrived to take permanent charge of the fortress, and all the allied forces, both officers and men, were withdrawn, except Captain Stanway of the engineers, who remained charged with the reform of the defects of the eastern sea line of the town and the complete re-establishment of the fortifications generally. These services were continued for three months after the general peace, till every thing had been rendered most perfect. The total expense, defrayed by the English government, amounted to £12,000.

CHAPTER III.

PRELIMINARY MOVEMENTS AND ARRANGEMENTS FOR THE SIEGE OF BAYONNE.

PASSAGE OF THE ADOUR.

The Duke of Wellington, during the winter of 1813 and 1814, having matured his preparations for carrying the war into the interior of France seized the earliest moment of the roads becoming practicable to invest and besiege Bayonne.

That city stands on the left of the Adour, at the confluence of the Nive, about four miles from the sea.

The former is a navigable tide river of considerable breadth for many miles of its course, and the latter, though not broad, is in the spring so rapid and deep in the vicinity of Bayonne as to be impassable without a bridge apparatus; so that both rivers form considerable obstacles to the movements of an hostile force, whilst good bridges of communication within the works render them most valuable aids to defensive manœuvres.

The fortifications of Bayonne on the left bank of the Adour consist of a bastioned line of the trace of Vauban, extending in almost a semicircular curve from the river above to the river below the town, and may be considered as capable of twenty-five or thirty days resistance. In addition to these permanent works, Marshal Soult had caused his troops to labour incessantly throughout the winter, in strengthening and adding to the capacity of this frontier bulwark, and had formed an advanced line or entrenched camp nearly parallel to the ramparts, at 500 or 600 yards in their front.

This advanced line of works being well supported by inundations and other natural obstacles, was of great strength, and covered sufficient space to enable the garrison to form unseen, and unexpectedly attack with their whole force the works of a besieger, necessarily divided by the Nive, and may be considered to have given Bayonne on the left of the Adour the strength of a first-rate fortress.

On the right bank of the river the works are confined to the small square fort or citadel of St. Esprit, of about 420 feet exterior side. This fort occupying a commanding height immediately above the Adour, serves to keep an enemy distant from the town on that side, and to cover the bridge which forms the main communication from the city into France.

The garrison of the fortress, under General Thouvenot, exceeded 10,000 men, and were aided by the Sappho sloop of war, and several gun-boats anchored below the bridge.

Under these circumstances, the Duke of Wellington selected the citadel for his point of attack, as being so much less strongly fortified than the other sides of the town; and to facilitate its reduction, decided, at the same time he blockaded the place on the left bank, to force the passage of the Adour lower down the stream, and fix a permanent bridge on the river, which should serve as a short and secure communication between the trenches and his floating depots.

On the 7th February, in furtherance of this plan, instructions were given to the commanding engineer, Lieutenant Colonel Elphinstone, to prepare a good and sufficient bridge for the above purposes, with a boom to protect it from fire or other vessels, which the garrison might send down the stream to destroy it.

A reconnoissance was soon afterwards made along the left of the Adour, to ascertain the most favourable point for communicating across it; when it was judged advisable to place the bridge at a short distance below a narrow bend in the course of the river, which would in some degree screen it from the view of the garrison.

This bend was considered to be 2½ miles below the permanent wooden bridge, which communicates between the town and citadel, and 1½ miles above the confluence of the river with the sea. In this latter space it was computed, that the 2 or 300 transports in attendance on the army might find secure anchorage.

The Adour, at the spot thus selected, was bounded on both banks by high retaining walls,* and the breadth of the stream between them was computed to be nearly 300 yards, the rise and fall of the tides at the springs were known to be 14 feet, and that on the right bank in rear of the wall they flooded the country to some extent.

This considerable breadth of river, added to the strength of the current, (it being the season of the year when the mountain torrents descend in the greatest force,) and an occasional heavy swell being produced by particular winds, rendered it far too hazardous to trust to the ordinary tin pontoons to form a suitable bridge; and as land carriage could not be procured to move larger and heavier boats to the river side, Lord Wellington decided to use, as substitutes for the pontoons, decked vessels from 30 to 50 tons burden, and that they should sail over the bar into the Adour, carrying with them all the apparatus of the bridge.

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* These walls were of the enormous thickness of 12 or 14 feet. They were built under the expectation, that by narrowing the river the rapidity of the current would be so much increased, as to sweep away the bar from the mouth of the Adour. See *Histoire du Corps du Genie, par Allent.*

A considerable number of these vessels, called chassemarées, were hired for this service in the ports of St. Jean de Luz, Passages, and Socoa,* and being assembled at the latter place, every exertion was used to collect timber and plank for the superstructure, and for a flexible boom.

The masts, yards, and spars of a vessel wrecked on the coast were picked up, every thing of the same nature found in St. Jean de Luz was purchased, and Admiral Penrose, who directed the formation of the boom, supplied various masts and spars from the fleet; but still the number of baulks for a bridge of the required length could not be completed within the time limited for the operation, and Marquis Wellington in consequence gave his assent to 13-inch cables being substituted for wooden baulks, and sixteen were immediately supplied by the admiral, or purchased at St. Jean de Luz.

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* The chassemarées thus obtained varied very considerably in their dimensions, 5 or 6 being of the length of 53 feet and upwards by 15 feet 4 inches in breadth, and their decks being 3 feet 10 inches above the water; whilst the smallest measured only 40 feet in length, by 10 feet 2 inches in breadth, and floated with their decks only 2 feet 6 inches above the water.

The hire of the vessels used for the bridge amounted to £123 : 8*s*. 6*d*. per day, besides the expense of 200 rations issued to the crews.

Under this construction the plan and arrangements for the bridge were proposed as follows.

Plate XII. Fig. 4 and 5.

The chasse-marées, or decked vessels, to be anchored head and stern at thirty feet distance from centre to centre of each other in a direct line across the river. Five cables to pass over and be supported on the deck of each vessel, so as to extend from bank to bank: these five cables to be kept at the equal distance of two feet asunder by means of grooves cut in a stout sleeper, (*Fig.* 8,) to be spiked fore and aft along the centre of the deck of each boat.

In order to secure the ends of the cables on the right bank of the river, it was proposed to attach an 18-pounder iron gun to the end of each, and raise the gun over the embankment wall of the river, which was fourteen feet in height next the water; and then lower it down ten feet (the depth of the wall towards the land) into a marsh, where it would bury itself.

On the left bank the boundary wall of the river was of the same height of 14 feet next the water, but its rear was filled up with sand to the level of the coping. (*Figs.* 6 *and* 7.) There it was proposed to lay down a frame of timber 32 feet long by fourteen broad, having 6 stout sleepers placed parallel to the prolongation of the five cables, in the intervals between.

In the five channels formed by the six sleepers, stout tackle, working through double blocks attached to the end of each cable, and secured round the sleeper forming the further extremity of the frame, were to be worked by capstans and gin tackles, so as to stretch the cables taught on the resistance of the 18-pounders buried in the marsh on the opposite bank, and also to admit of their being lengthened or shortened according to the fall or rise of the tide.

In order to give the necessary stability to the frame, the end furthest from the river was to be planked over and loaded with sixty tons weight of sand in bags. It was further proposed, to lay the frame three feet below the surface of the ground, so as to admit of a flooring being placed over the tackles and blocks as soon as the straps should be secured; which flooring, passing from the top of the wall of the river bank to the top of the sand-bags, should render the approach to the bridge level, and prevent the blocks being any impediment to those passing over it.

On the right bank, the great breadth of the boundary wall admitted of its serving as a road for the guns and waggons to travel to its extremity, and prevented the necessity for a causeway being formed through the flooded marsh in its rear.

To prevent the wear of the cables by friction against the surface of the retaining wall, green bullocks' hides were to be laid under them on the right bank; and a piece of timber, with scores cut in it, corresponding with the grooved sleepers spiked fore and aft on the decks of the boats, was to be laid on the top of the wall of the left bank.

The boom was to be formed of masts from 50 to 100 feet in length, and from 1 to 2 feet in diameter, placed in two lines 24 feet apart, the strongest masts being in the front line.

Each mast to be anchored separately and independently by the centre, those of the front line having their anchors up the stream, and those of the second line down the stream, to resist the flood tide. The masts of each line were to be anchored at 20 feet apart, and their extremities connected with each other by means of strong chains, lying slack about 2 feet under the water. The centre of the masts of the second line were to be placed opposite the intervals in the first line, their extremities being similarly connected by slack chains; and the two lines being also united by slack chains, so as to give the boom the necessary elasticity throughout, to resist the shock of any body sent to break it. Further, two 13-inch cables were to be stretched as tight as possible along the line of masts, and each end of each mast to be securely lashed to them.

PREPARATION OF THE BRIDGE AND BOOM.

Socoa was made the point of assembly and outfit of the vessels, and the great centre of preparation for the superstructure and boom.

The royal sappers and miners, the artificers from the guards, those of the royal staff corps, and large parties of the navy, worked incessantly, under the direction of the engineers. Capstans were constructed, cables spliced, and chain adapted to the boom; all timber, anchors, &c. that could be procured from the neighbouring ports, or from the fleet, were appropriated to these objects, and the platforms prepared for the siege of Bayonne were cut into plank. Further, six 4-oared jolly-boats were purchased from transports, and fitted on the ordinary pontoon carriages to accompany the march of the troops, and be used whilst fixing the bridge.

Lieutenant Colonel Elphinstone, who superintended in person these services, made daily reports of the progress of the work to Marquis Wellington till the 19th, when the arrangements being all complete, the operation was ordered to commence.

ARRANGEMENTS FOR TRASPORTING THE BRIDGE.

The materials for forming the boom, which as a separate and distinct object was altogether under the navy, were shipped on board of two transports and a sloop.

With respect to the bridge, it being calculated that from 25 to 30 chassemarées would be required to extend across the river, in order to make provision for the casualties almost necessarily attendant on such a difficult navigation, 48 were prepared for the service.

There were put on board each, 28 three-inch planks 12 feet in length, 1 piece of timber 10 inches square, having 5 grooves in its upper surface, 2 hand-saws, 2 axes, and 2 skains of hambro' line, to lash the planks to the cables.

Two royal sappers and miners also embarked on board each chassemarée, for the purpose of cutting away the waste boards to render the deck level; and also to spike down the timber prepared with grooves to receive the cables the moment the vessel should be moored.

The cables for the superstructure were put on board of the best and strongest boats, intended to form the centre of the bridge, and, for the sake of expedition, were so coiled as to be conveniently stretched out by both ends at the same time.

Ten iron 18-pounder guns, for securing the ends of the cables on the right bank, were also put on board ten of the chassemarées, with facilities prepared for hoisting them out; and frame, capstans, blocks, &c. for hauling the cables taught on the left bank, were put on board other six vessels.

The chassemarées were told off into five divisions, the centre being placed under the command of Captain Slade, Royal Engineers; the right divisions under Lieutenants Savage and West, R. E.; and the two left under Lieutenants Robe and Rivers, R. E.; Lieutenant Reid was charged with securing the ends of the cables to the guns, and hoisting them over the wall on the right bank into the marsh; Lieutenant Melhuish, R. E. was charged with securing the purchases and hauling the cables taught on the left bank. The construction and fixing down the apparatus for that purpose was confided to Major Tod, Royal Staff Corps.

The commanding engineer arranged to march with the advance of the troops, in order to decide on the precise spot for fixing the bridge.

20th February.

At this time the field-bridge establishment with the army consisted of a division of twelve pontoons, fully horsed and equipped in every particular. These were now assembled at Fuentarabia to move with the left wing to the Adour, to be used as rafts or flying bridges to establish a force on the right bank previously to the operation of fixing the bridge."*

In order to insure the pontoons reaching the bank of the river before the break of day, it was proposed they should march this evening to the most advanced post combining safety with concealment; but in consequence of a report made to Marquis Wellington by a staff officer, that the Adour might be reached with great facility in one night's march from Bidart, six of the twelve efficient pontoons were this day ordered to that village from Fuentarabia, and the other six were directed to march to the same place during the night of the 21st.

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* The calculation submitted by Colonel Elphinstone was, that each raft would transport over 100 men, and two turns be accomplished in an hour.

22*d February.*

On the evening of the 22d the chassemarées put to sea from Socoa, escorted by Admiral Penrose, with the Porcupine frigate, Lyra brig, and five gun-boats; the immediate command of the flotilla, and the nautical arrangements attendant on entering the Adour and bringing the chassemarées to their destined anchorage, being entrusted to Captain O'Reilly, Royal Navy.

It was expected that the passage from Socoa to the Adour would be accomplished in 16 or 18 hours; therefore to insure the unmolested entry of the flotilla into the river it was arranged to gain possession of the right bank this night by means of troops to be ferried over in the jolly-boats and on rafts made of the pontoons.

DISPOSITION OF THE ARMY.

The right and centre of the allied army which, by a series of manœuvres and small affairs between the 14th and 17th, had driven the French behind the Gave d'Oleron, and obliged Marshal Soult to give up his communications with

Bayonne, were in march for further triumphs in the direction of Orthes.

The left wing, about 13,000 men, allotted for the duties of the siege was thus disposed.*

The 5th division occupied the position of Monguerre on the right of the Nive, and the 1st division extended from the sea in front of Biarets across the high road of Bayonne to the country-house of Pucho. Two brigades occu-

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* *Force composing Left Wing.*

FIRST DIVISION.

Major General Howard	**1st Guards, 2 Battalions.** **1 Company 60th Rifles.**
Major Gen. Hon. E. Stopford	**Coldstream, 1 Battalion.** **3d Guards, ditto.** **1 Company 60th Rifles.**
Major General Hinuber	**3 Battalions K. G. L.**
Colonel Busch..............	2 light Battalions do.
Major General Lord Aylmer ..	76th Regt. 84th do. 85th do.
FIFTH DIVISION.......	Major General Oswald.
Major General Hay..........	Royals. 9th Regt. 38th do.
Major General Robinson	4th Regt. 47th do. 69th do.
Major-General Spry	3d Portugueze. 15th do. 8th Caçadores.

pied the advanced heights of Bassusarry, and a corps of Spaniards under General Freyre were in close reserve at Bidart.

MOVEMENTS OF THE TROOPS.

Lieutenant General Sir John Hope, in command of the above corps, moved from his cantonments at 1 A. M. on the 23d, being the morning after the chassemarées put to sea, with the intention of establishing a post on the further bank of the Adour before day-light.

The left of his force, destined to effect this object, and to cover the entry of the flotilla, marched along the high road of Bayonne till near Anglet; it then turned to its left into a cross country communication, and, notwithstanding the incumbrance of four 18-pounders and the jolly-boats, reached the left bank of the Adour near its mouth before day-break.

It was found, however, that the pontoon train from Bidart had not arrived, and the corps could only command the use of five pontoons, which they had contrived to bring with them by means of relays of horses taken from the field-guns. In consequence of this deficiency in the means of crossing the river, the troops were halted behind the sand hills to wait for the pontoons.

During this halt the French were driven out of Anglet, dislodged from the great pine wood which stretches along the left of the river, and confined within their entrenched camp, so as to leave free space for the operation of throwing over the bridge, to protect which, the 18-pounders were put in position on the sand hills almost opposite to Boucaut, to scour the right bank.

The guns and some rockets speedily obliged the French gun-boats to retire from their anchorage off Boucaut, but failed to destroy the Sappho sloop of war, though they kept up a continued discharge of hot shot for some hours and struck her repeatedly.

At 11 A. M. the position of the investing corps was as follows:—the 5th division closely shutting up the works of the entrenched camp on the right of the Nive; Lord Aylmer's British brigade and a Portugueze brigade performing the same service on the left of that river; General Freyre's Spaniards at Anglet; Colonel Maitland's brigade of Guards with the 18-pounders on the bank of the Adour opposite Boucaut; Colonel Busch's light brigade in the pine wood; General Stopford's brigade of Guards, and General Hinuber's brigade of the King's German Legion, behind the sand hills at the mouth of the Adour.

PASSAGE OF THE RIVER.

23d February.

At this hour (11 A.M.) slack water approaching without any intelligence having been received of the pontoons from Bidart, and it being ascertained that the French had only a small picket of observation on the right of the Adour, Sir John Hope decided to commence the passage with the slight means at his command.

The troops took the four jolly-boats on their shoulders and carried them over the sand hills to launch them into the water, whilst the field-guns moved forward to protect the operation by their fire; but immediately on the appearance of the troops the French picket withdrew, and the boats and pontoons were launched without difficulty.

Fifty men were instantly rowed over in the jolly-boats, and a hawser being stretched across the river was made fast on the two banks. Before noon the five pontoons had been formed into rafts; but under the expectation of the immediate arrival of the division of pontoons from Bidart, the commencement of the operation of ferrying over the men was suspended till 2 P.M. During this interval slack water had ceased, and the tide had begun to run so strong that the rafts worked with great difficulty, and in the course of the afternoon only six companies of the Guards and two of the 60th Rifles had been passed to the right bank.

A little before dark, about double that force advanced towards them from Bayonne. The Guards were judiciously posted by Colonel Stopford to receive the threatened attack behind the sand hills, having their right on the Adour and their left on a morass, and the artillery on the opposite bank flanking the ground in their front. In this position they received the assailants with a well-directed fire of musketry, which, added to a discharge of rockets and a steady cannonade from the left bank, induced them to halt and, after some hesitation, to return into Bayonne.

24th February.

During the night of the 23d, six of the pontoons joined from Bidart, and being used as rowing boats were substituted for the rafts; from 12 to 15 men passed at each turn, the cavalry swimming their horses behind the pontoons, and by the evening of the 24th, the whole of the 1st division were on the right bank. To favour these operations, the 5th division, between the Adour and right of the Nive, kept up a good deal of firing on the entrenched camp, and made demonstrations of crossing the river above the town. These feints were supposed to have deceived the defensive army as to the real point of crossing; but is it not more probable that the French, knowing the difficulties of the navigation, and the necessity for larger pontoons than those which usually accompany an army, deemed the operation impracticable, and disregarded the movements below the town?

NAUTICAL MOVEMENTS.

During the night on which the vessels with the bridge apparatus put to sea, the wind was fresh but contrary; the next day, (the 23d,) it was light and variable, but on the afternoon of the 24th it set direct on the land, driving a heavy sea before it. Immediately the flotilla, led by an English gun-boat under an English pendant, ran for the mouth of the river; a high surf on the bar and the uncertainty of hitting a shifting channel dismayed the native crews of the chassemarées, but stimulated to the performance of their duty by the officers and sappers, most of them ventured on, and 34 entered the river without accident.* Of the other

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* Admiral Penrose, in his public dispatch, dated the 25th February, 1814, with the manly feelings of an English seaman, thus mentions the service rendered by the engineers and sappers.

" That so many chassemarées ventured the experiment, I attribute to there having been one or more sappers placed in each of them, and a captain and eight lieutenants of engineers commanding them in divisions.

" The zeal and science of these officers triumphed over the difficulties of the navigation, and I trust that none of their valuable lives have fallen a sacrifice to their spirited exertions."

14, one grounded on the bar, one was driven on shore, and 12 returned to St. Jean de Luz. The two transports laden with the boom entered the river in safety, but the sloop was driven ashore, and also one of the gun-boats, and went to pieces.

The chassemarées, immediately on reaching the spot selected for the bridge, were anchored head and stern in a masterly manner by the navy, the cables were stretched across the river, the planking fastened to them, and every other arrangement carried into effect as proposed, with such assiduity (the sappers working throughout the night,) that by noon on the following day the bridge was reported passable, and many troops filed over it.

The boom was laid down at the same time by the navy, and was completed soon after the bridge.

A battery of eight 18-pounders was thrown up on each bank of the river, to sweep the approach to the boom, and four gun-boats were stationed on its flanks; whilst row-boats with fire grapplings were kept constantly manned in readiness to meet and anchor any fire or other vessel that might be drifted down the stream, and lighter-boats plyed in observation higher up the river.

OBSERVATIONS ON THE BRIDGE.

From the necessity of using the bridge for the passage of the troops as soon as practicable, and the cables continuing to stretch after they were fixed, they could not be kept sufficiently tight, and for some time there was such a considerable bulge or dip in the cables between each vessel, that whenever there was much swell the waves washed over the chess boards and stopped the communication.

After a time, however, this gradual stretching of the cables having ceased, and a greater purchase being applied, they were drawn and kept nearly horizontal; and as soon as baulks could be cut they were laid from vessel to vessel independent of the cables, after which no interruption of the communication took place from any derangement in the construction of the bridge; but occasionally a heavy swell caused the vessels to pitch so violently, that it was unsafe for men to attempt to pass between them.

The bridge itself was never broken or even injured by the action of the water. It, however, met with several accidents from vessels, but which, by the activity and skill of Major Tod, who was left in charge of the structure, were instantaneously remedied, and it formed uninterruptedly the principal communication of the army into France till the conclusion of the war.

The boom was not considered to have answered the purposes contemplated.

CLOSE INVESTMENT.

26th February.

On reconnoitring the citadel, the garrison were found to be labouring in the formation of an advanced line of defence, consisting of four redoubts, connected by a covered-way at 400 or 500 yards from the citadel, but which, being still in a very unfinished state, they protected by strong posts in the villages in its front.

27th February.

The troops were put in movement in the afternoon, and after some sharp skirmishing drove the garrison within their advanced line, and established their centre in the village of St. Etienne, their right at the Vererie of St. Bernard, on the Adour below the town, and their left on the Adour above the town, about 2,000 yards from the suburbs of St. Esprit.

A road, forming almost a parallel to the new works, at 240 yards in their front, served as a communication along the centre of this line, and by means of traverses, walls, &c. was converted into a beautiful covered-way, along which, and in the houses in its front, the pickets were lodged.

The troops during the blockade bestowed considerable labour in strengthening these advanced posts; and although the garrison connonaded them very frequently, they never succeeded in dislodging a single picket. Several houses in the village of St. Etienne were also converted into posts, and the convent of St. Bernard on the right was well barricaded by the Guards. The left was too distant to have much to apprehend.

These precautions were absolutely necessary, in blockading so closely a place containing more than a numerical equality of force with either of the investing corps separately, and night and day every one was kept prepared to stand to their arms.

Artillery and Engineers' Proceedings during the Investment.

The commanding engineer with the army, Lieutenant Colonel Elphinstone, took the direction of the attack in person, and Lieutenant Colonel Hartmann, of the King's German Legion, was charged with the artillery service.

By means of various equipments sent from England, there were now collected on board transports in the harbour of Passages the following battering ordnance and ammunition, and a large supply of engineers tools and stores, viz.

24-pounders, iron	52
8-inch howitzers	22
68-pounder carronades	16
13-inch mortars	4
10-inch do.	19
4⅖-brass coehorn mortars	20
also	
18-prs. iron, of field equipment	6
	139 pieces.

	24-pr. round shot	71,730	90,998, or 1,750 rounds a gun.
	24-pr. grape	3,338	
	24-pr. spherical	15,930	
	18-pr. round shot	23,413	29,145.
	18-pr. grape	1,382	
	18-pr. spherical	4,350	
For 68-pr. carronades and 8-inch howitzers.	round shot	700	19,994, or 500 rounds each.
	case and grape	1,500	
	spherical case	10,266	
	common shells	7,328	
	carcasses	200	
	13-inch common shells	1,694	1797, or 450 rounds each.
	13-inch carcasses	103	

10-inch common shells	5,705	6990, or 368 rounds each.
10-inch carcasses	220	
Rounds of pound shot for 10-inch	1,065	
4⅖-inch shells	8,000	8,400, or 420 rounds each.
4⅖-carcasses	400	
Barrels of powder, 90lbs. each	10,160	

with travelling carriages, side-arms, gins, small, laboratory, and general stores of every description, in ample proportions for the service of the ordnance.

On the 6th March, the Marquis of Wellington issued the following Memorandum.

PLAN FOR COLLECTING THE STORES FOR THE SIEGE OF BAYONNE.

1.—The means are the horses attached to the brigades of artillery with Sir John Hope's corps, the mules attached to the divisions to carry ammunition, and 200 carts in the service of the commissariat, and vessels of from 30 to 50 tons burthen.

2.—The ordnance to be forthwith disembarked at Passages, and to be parked in readiness to be drawn off, when Lieutenant General Sir John Hope may think proper, by the horses attached to the different brigades of artillery attached to his corps.

3.—Five days will be required to perform this service whenever Sir John Hope will order it; that is to say, 2 for the horses to go and 3 for them to return.

4.—Powder, shot, and shells, for 4 days' complete firing, at 160 rounds a gun for twenty 24-pounders, per diem, 100 rounds for 12 howitzers, and 80 for 12 mortars, (no ammunition being to be sent for the 6 reserve 24-pounders,) to be embarked in vessels of from 30 to 40 tons burthen in Passages, to be sent from thence round to St. Jean de Luz, and to be there in readiness to go into the river Adour, as soon as the weather and the state of the bar will admit.

5.—Powder, shot, and shells, for four days complete firing besides, to be sent round to St. Jean de Luz, and to be there landed.

6.—Two hundred carts in the service of the commissariat to be employed in drawing this ammunition from St. Jean de Luz to Bas Anglet, from thence it will be carried by the ammunition mules of the divisions to the depôt to be formed at Boucaut, or elsewhere, for the siege.

7.—The carts will be 3 days on their journey to Anglet and back; they will carry 2 days' firing in 3 trips, so that in 9 days that quantity will be in the depôt at Anglet, and in 18 days the ammunition for 4 days' firing.

8.—The mules could make 2 trips in 1 day from Anglet to Boucaut.

9.—The engineers' stores should be likewise brought to St. Jean de Luz in small vessels, half to be landed there, and half to be in readiness to be sent into the Adour, in case they should be required.

10.—If the ammunition should get round, the engineers' stores will likewise. If the ammunition should not get round, it is supposed that one trip of the carts will bring all the engineers' stores required, and probably it might suit the operations of the siege that the first trip of the carts should bring engineers' stores.

11.—Colonel Dickson, Colonel Elphinstone, and Mr. Commissary General Dalrymple, will give orders for the execution of this plan, under the direction of Lieutenant General Sir John Hope, whenever he shall think proper.

(Signed) WELLINGTON.

The following ordnance was ordered from Passages, in consequence of No. 4 of the above Memorandum, and 700 artillery horses were assigned for their removal from Ituriea to Bayonne, viz.

24-pounder guns	26
8-inch howitzers	12
10-inch mortars	12
4⅖-inch coehorn mortars. . .	20
	70 pieces.

The following was the proportion of ammunition for eight days firing, one half of which was ordered to be disembarked at St. Jean de Luz to be taken by land, and the other half to be kept there on board chassemarées to be sent to the Adour when the bar would admit.

For 24-prs. .	round shot . .	29,440
	grape and case .	1,920
	spherical case .	1,920

For 8-in. howit.	common shells	5,020
	spherical case	1,280
	carcasses	100
10-in. mortars	common shells	5,020
	carcasses	100
4⅖-inch common shells		4,000
Barrels of powder, 90 lbs. each		4,050

The quantity actually sent to Boucaut by land and water during the investment, was—

24-pounder round	36,721
24-pounder grape	2,000
24-pounder spherical	2,253
8-inch shells	6,205
8-inch spherical	7,864
10-inch shells	5,581
4⅖-inch do.	5,998
Barrels of powder	6,000

On the 13th April, the artillery had succeeded in conveying the battering ordnance and the above quantity of ammunition to their park before the citadel, and had assembled 670 gunners for the duties of the siege. The engineers had also established most ample depôts of fascines, gabions, platforms, splinter-proof timber, &c. and had collected a body of nearly 400 well trained sappers and miners, (38) with an ample supply of tools and stores.

Never before had the army possessed similar means for a siege, and in a few days an attack of the citadel, so utterly irresistible from force and combination, would have commenced, as to ensure the besiegers a speedy and almost bloodless triumph, when intelligence of the capture of Paris damped their hopes and checked their ardour.

SORTIE FROM THE CITADEL.

Night between 14th and 15th April.

This same night, however, the vigilance and firmness of both officers and men were put to a severe test; for rather more than an hour before the dawn of day, the garrison, after a feint of attacking the investing corps on the left of the Adour, directed a most powerful sortie against that portion of the investing force on the right bank.

Having silently collected about 5,000 men on the flanks of the citadel, and behind their new entrenchments in its front, they sallied forth so rapidly and in such a forcible manner that the night being dark, they were over the sentries as soon as perceived; and in a few minutes had penetrated through the advanced line of pickets, bayoneting some and making others prisoners, till they had gained possession of every entrenched point of the road on the right of St. Etienne; when working parties of sappers, which accompanied the sortie, began immediately to level the work.

The principal efforts and force of the assailants, however, were directed against the village of St. Etienne, and they pushed into it in considerable numbers; but some of the houses which had been judiciously converted into posts, being obstinately and skilfully defended, gave time for a brigade to move up and take part in the struggle before the sortie had dislodged the defenders.

The whole of the investing force was under arms instantly on the first alarm; and as soon as the object and principal points of the enemy's attack were ascertained, two battalions of the Guards, on the right of St. Etienne, fell upon the French troops employed filling in the entrenchments, and after some sharp skirmishing, having forced them back, advanced and charged in gallant style the left flank of the corps acting against the village of St. Etienne: when that body, fearing to have their retreat intercepted, hastily fell back on the citadel, under incessant and well directed discharges of musketry and artillery.

The loss on both sides in this action was particularly severe, as the troops were much intermixed and fought with desperate energy.

The hollow road leading from the citadel to the village of St. Etienne, from the difficulty of getting out of it, became the principal theatre of destruction. Whichever party gave way at this spot, during the varied fortunes of the struggle, suffered almost utter destruction for the moment.

Here Major General Hay fell whilst urging the defence of the village; and Sir John Hope, on the first alarm, riding up this hollow road to ascertain the nature of the attack, came unexpectedly on the assailants, whose fire killed his horse, which, falling upon him, caused him to be made prisoner: many officers and nearly 300 men were also sent prisoners into the citadel by the assailants, and more than 500 were left wounded or dead on the several points of contention.

The loss of the assailants was above 900 killed and wounded, and the only benefit they derived from this diminution of their strength, was the burning of a picket-house in the Jews' burying ground, and another on its immediate right.

The capture of Paris, and the abdication of Napoleon, being known to the investing force previously to this sortie, no offensive measures were retaliated on the garrison; but the troops being kept vigilantly on the alert, waited in their posts the official notification to the governor, which arrived on the 27th, and saved Bayonne from inevitable and speedy capture. (39.)

CHAPTER IV.

OBSERVATIONS ON COUNT CARNOT'S TREATISE ON THE DEFENCE OF FORTIFIED PLACES.

"Within these few years, the judgment of men in all countries, on the value of fortresses, has undergone great changes. Soon after the revolution in France, the overwhelming torrent of the republican armies, supported by opinion, bore down every thing; the most strongly fortified towns yielded to it equally with the open village; not one fortress opposed a due resistance to uphold its ancient reputation, and all belief in their use was staggered. That torrent happily is now spent; the operations of war are fast returning into their former channels, and fortresses are resuming their due rank in its combinations. No longer do we hear of towns surrendered on a first summons, or under the terror of a bombardment; no longer are fortified places considered useless drains on an army. In the hands of the French they have suddenly assumed a new character, and the most insignificant post makes a protracted resistance;—a resistance which, to many, is perfectly unaccountable on any reasoning from analogy or experience. To profit by this feeling, the French government have, by popular treatises and other arts, attempted but too successfully to impose a belief that with them the defence has received some great improvement; and the enemies of France, by a strange perverseness of judgment, at the very moment when they have to reconquer those possessions which they readily surrendered as incapable of resistance, are, without due examination, imbibing an opinion of their impregnability. It is of considerable importance to those who are likely to act only as assailants, that such ideas should be discouraged, as they do not appear founded in fact. No new idea nor invention has been brought forward in support of them; and the only improvement which the defence of places can be admitted to have received, consists in the negative advantage accruing to it from the disuse of late years of that science of attack, and of those powerful means which formerly gave to the besiegers so irresistible a superiority.

" Since the substitution of science for force, and the great improvements which have taken place in the nature and practice of artillery, there is no military operation so certain in its results and so liable to calculation as the reduction of a fortified. place. Every other military event is in some degree influenced by chance; but the result of a siege is not, as far as depends on its own details. The art of attack has been rendered so perfect, and has attained such a decided superiority over defensive efforts, that no fortress destitute of great natural advantages can resist beyond a very limited time; bravery and conduct will serve a little to retard, but cannot avert its fall. Shells and an enfilade fire à ricochet are irresistible; the timid and the brave alike fall under them."—*First Edition of these Journals*, 1813.

These must appear bold assertions in face of a publication generally credited as having proved the superiority to be with the defenders of a work; and which asserts that *a good garrison is capable of successfully resisting an army ten times more numerous than itself, and ultimately to destroy it, if it continue obstinate in the attack.*

The opinions of professional men, however, founded on study and experience, are not to be shaken by declamation unsupported by fact, even when set forth in the most brilliant and specious language. Carnot's Traité de la Défense des Places Fortes, the work alluded to, has made much noise in the military world; and as its effects are likely to be of importance from the general idea adopted by the bulk of military men regarding it, which is no less than that some grand discovery is therein detailed to prolong the defence of places to a great degree, it will be useful to examine how far such opinions be correct.

General Carnot is a man of considerable abilities. He was before the revolution in France an officer of engineers, and published some professional works, and projected new systems of fortification; in doing which, by the bye, he did not exactly show that confidence in the existing fortresses which he claims for them in every page of the treatise under consideration. The fact is, a few years since, when nearly all the important fortresses in Europe had fallen into the hands of the French, he was employed by Napoleon to write a popular work on their defence, to stimulate the governors and garrisons to maintain them to the utmost extent.[*]

This he has executed with much ingenuity and address, and has gained to his country the important advantage of persuading cursory readers of all nations, (for all look to the French authors as oracles of military science,) that the strength of fortresses has been hitherto overlooked; and that they are capable of considerably greater resistance than has been before conceived, though without advancing any new idea or improvement whatever, except one, the merits of which shall be presently discussed.

The work is not a fair comparison of the advantages or disadvantages of any particular mode or system of attack or defence, nor is there any attempt at rational discussion.

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[*] The immediate cause of this treatise being ordered to be composed was the facility with which the English obtained possession of Flushing in August, 1809. Napoleon's orders to Count Carnot are dated from Schoebrunn, 1st October, 1809; his words are:—Il faut à cette occasion se récrier contre cette manie qu'ont les officiers du genie, de croire qu'une place ne peut se defendre que tant de jours; faire voir combien cela est absurde, et citer les exemples connus de siège, ou, au lieu du nombre de jours qu'on avait calculé devoir mettre à faire cheminer les parallelès, on a été forcé d'y employer un temps bien plus considérable, soit par des sorties de la place, soit par des feux croises, soit par toute autre espece de retards, que la defense de la place a fait naitre.—*Carnot*, 4*to. Edition*, 1812, p. 61.

It is written to persuade a belief on a particular point; and Carnot, in the true spirit of a controversialist, turns and twists the subject in every way to his own side of the argument, in a manner unjustifiable in treating on any science, and only worthy of a pamphlet to answer the purpose of the day, in which light this treatise should be considered.

Its reputation has, with the English, been not a little increased by the apparently corroborating evidence of the late sieges in the Peninsula, and the necessity of carrying every town by assault; when in old times the two or three breaches formed in the body of the place would, it is conceived, have induced their surrender without the ceremony of such hard actions. It has, however, been shown in the Journals that those assaults were necessarily premature, from want of time or means, which could not be given to the occasion; as well as from the faultiness of some of the military establishments most necessary to the reduction of fortified posts, and therefore they should not be allowed to have any weight in support of Carnot's assertions.

The art of attack and defence, and the superiority of the former, is precisely where it was before this *celebrated* work was published; and if it has the effect of encouraging in some degree French garrisons to be rash, it is for the English and the other powers confederated against France, who may have sieges to undertake, to bring them to their senses by instantly adopting increased means and vigour, and which could not fail to have that effect.

So very inferior is the art of defence in modern warfare to the art of attack, that it may be said boldly there has been no particularly good defence since the improvements introduced into the latter by Vauban, where the means of the besieging army have not been very inferior to the object; and though the writers and panegyrists of such defences have kept that circumstance out of sight, the particulars of the events which occurred at them betray it in nearly every instance. A few exceptions may perhaps be made, where some gross blunders or unlooked-for accidents have occurred, but that is an argument for either side.

In a discussion, the object of which is to show the powers of resistance of garrisons against cannon and the mine, Carnot does not hesitate to quote the resistance of the Syracusans, Veians, Tyrians, Carthaginians, Saguntans and Gauls, against the battering ram and catapulta, as stimulating examples. Indeed the account of every brilliant defence introduced into Carnot's work from history is both disingenuous and fallacious. Almost every other siege since the world began is against him; and taking the events of any war, for one such brilliant defence will be found fifty bad defences, or at least leading to principles directly contrary to his. Admitting, however, the justice of his selection of thirty-seven modern defences quoted as good, (the thirty-eighth, Genoa, was only a blockade,) we find twenty-five of them to have been prior to the year 1600; thirty-two of them prior to the year 1672, when mortars were first used; thirty-five prior to the year 1697, when parallels were perfected and the enfilade fire à ricochet introduced; and in the 116 years which have since elapsed, his ingenuity and research can only find two sieges worthy of mention, and those by no means comparatively brilliant.

Ought not this fact to be considered decisive as to the overwhelming superiority the attack assumed at that period?

If the business of a vigorous defence be so brilliant, so easy, and even so safe, as Carnot represents it, it is surprizing it should be deemed necessary to enforce its propriety so very strongly. But when are called to recollection the various instances of men of acknowledged bravery, for the first time of their lives, showing timidity when engaged in the defence of a fortress, (if, as he says, to capitulate be timidity); when we find the headstrong Charles XII. of Sweden, after expressing his astonishment that any good place could be taken, himself forced to fly in an open boat by night from so strong a fortress as Stralsund to save himself from its impending fall; it must be decided that Carnot has either not stated the pro and con with fairness, or that he has discovered new means that should very much prolong the resistance of towns.

The latter idea seems to have taken possession of many officers minds, either from reading the work cursorily, and taking every thing it contains for granted, without considering the contrary side of the argument; or, perhaps, from the more frequent reasons, of now, for the first time, reflecting on that branch of military knowledge; and, pleased with gaining an insight into it, by a work written in an agreeable style, with all the elementary and abstruse points out of the way, they are unwilling, or have not the power, to correct their own judgments; but become absolutely at the mercy of the author, and go with him to the extent he desires, as long as he makes his arguments plausible.

But analyzing Carnot's work in search of improvements, where has he proposed any simple method of remedying the well known defects of the existing fortifications; or shown any practicable or effectual mode of warding off the overwhelming effects of enfilade and concentrated fire? He talks of mines, as if his studies were only advanced to the beginning of the last century, when a countermined glacis to a small fort was deemed sufficient to detain the besiegers two months. Not a word escapes him of Mouze's experiments, and Gillot's application of them to reduce the most complicated systems of countermines in a few days—surely they could not have been unknown to him.* His defence of the breaches is as fallacious and equally disingenuous. He speaks of the advantage of height, and of showing the same front as the enemy—can he also show the same depth as the columns which attack in succession? And what is the state of his defending troops, who, crouching in disorder, from the heavy fire pouring down on them in the confined space within the breach, are suddenly called to the alert, and in half a minute meet the mass of assailants, face to face, with no sheltering walls or ditches, which they know to have been their only protection? Such, and the various other disadvantages accruing to the defence of breaches from the enemy's artillery, are unnoticed by him. Nay, with an affected ignorance of the great precision and irresistible effect which have been given to that weapon, he gravely recommends for present imitation, the manner of defending a breach of the Chevalier de Ville, written two hundred years since; much of which is founded on the presumption that artillery cannot be used to batter in the night; that cover may frequently be made against it by a few gabions; that a row of palisades may often be maintained along the top of the breach, with many other petty stratagems which, nearly from the date of that publication, have ceased to be practicable.

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* These observations were made on the original edition. In the third edition, under the head of Second Memoire additionel, page 561, Count Carnot expressly admits that since the use of globes of compression and the discovery that an excess of charge will do away the necessity for putting the weight of earth over the powder, hitherto deemed necessary, subterraneous warfare has become a means of abridging instead of prolonging the defence.

He even insinuates that the moral effect of their relative situations is in favour of the besieged; but that is most preposterous, for it is notorious how much the drooping spirits of a besieged garrison require to be supported by frequent promises, whether true or false, of certain relief.

If the governor has really an entrenchment, which Carnot says he ought to have, the bastion will act the part of an outwork, and be taken in the same way step by step. But what besieged place ever neglected to commence a retrenchment in the bastion attacked, and what is the usual state of such entrenchment after the greatest exertions, when the siege draws to a close? Ninety-nine times out of an hundred it is totally indefensible. Further, his works to be carried on during the siege are on a scale to employ the total of the garrison; his sorties the same; his movement and working of the artillery for a large number, &c. &c. when in fact the strength of the garrison will admit usually of little more than affording proper reliefs to the standing guards and duties. No allowance is made for casualties and sick towards the latter end of the siege, when the real defence, as he says, begins. At that period of weakness and inanition, when in fact the defenders are blocking up their gates, cutting away their ramps, and trusting their communications to a few ladders, he talks of his formidable sorties, and other violent exertions.

Notwithstanding Carnot's declamations, Cormontaigne's comparisons of the powers of resistance of fortresses are perfectly fair; and if he makes no allowances for the impediments to his approaches from sorties, it is because he allows sufficient time in their construction, particularly the nearest works, not to fear them. For if the approaches and parallels be carefully perfected for defence, and the besiegers keep a proper force and due arrangement in the trenches, what sortie can take place but to the detriment of the garrison?

Carnot's grand project and invention, however, to make a place impregnable, is vertical fire. His principle is to increase it to such an extent during the latter part of the siege, while the besiegers are in the third parallel and in front of it, as shall effectually kill or wound them all; and, what is really surprising, he says that it is an idea he has entertained for years, but would not divulge before, for fear of its adoption by the enemies of France.

His argument is thus:—

The third parallel he reckons at 100 yards (50 toises) from the salient angle of the bastion, and its length something more than 360 yards; and, as a liberal calculation, he allows in round numbers 60,000 square yards between the third parallel and the place on which the besiegers have to carry on their work, at the lowest calculation, for 10 days.

The garrison being 4,000, the guard of the trenches must be 3,000. That number of men, at one square foot each, will cover an 180th part of the whole space; and consequently one vertical shot out of every 180 must hit its bird. This, he says, is the minimum of its effects, because the men are not uniformly dispersed, but collected in points where the fire can also be concentrated; and a man will take up much more space than a square foot in most positions he must place himself to fire or to work.

Place six 13-inch mortars *only* on the front attacked, two in each salient angle of the two bastions and ravelin, well traversed, and having a bomb-proof covering over them, so that nothing can touch them nor stop their practice.

Each of these mortars will be loaded with small balls, or pieces of iron ¼ lb. each; 600 will be its charge, equal to the weight of the shell. The 6 mortars will throw, therefore, 3,600 balls, and on the calculation that one in 180 takes effect, each discharge will kill or disable 20 men.

Each mortar firing 100 rounds per day, the destruction will be 2,000 men, or in the 10 days 20,000, the whole besieging army! If the garrison be stronger, suppose 10,000 men, the besiegers must be proportionably more numerous in their trenches, and will lose 50,000 men.

This calculation even he insists is much less than he ought to make it, as 10 days are too few to allow for the work between the third parallel and the breaches, and the mortars might be more in number and fire quicker. He also recommends musketry being fired at an elevation of 45°.

The whole of this project to kill or maim every man of a besieging army is that of an enthusiast, and would scarcely in any one point stand the test of practice.

In the first place it presumes, that the whole guard of the trenches would be penned like cattle in the third parallel and in advance of it ready to be killed, however little the work may be in front of the parallel; for instance, during the first period of the 10 days.

But the besieger, who will not see the necessity for a large force to watch a front from which the garrison *cannot* make strong sorties, in consequence of the near and destructive fire of the parallel, will keep the larger proportion of his troops in reserve to repulse the sorties on his flanks from the collateral fronts, from which they *may* be made in force. Secondly, it would clear the covered-way and ditches of the defenders, for it is well known how uncertain is the range from this kind of weapon. To concentrate such a fire of loose balls and pieces of iron as Carnot mentions would be impossible; it would scatter over the whole surface, from very near the mortar to the range of the farthest ball.

If he had proposed some means for rendering more accurate the known vertical fire of common and stone mortars, or the known discharges of heavy grape and canister shot from howitzers, no one could have denied that a considerable advantage had been obtained for the defence; and it would probably have been more effective than his ill-matured project for increasing its powers. But then it would not have struck the reader by an air of novelty, and an appearance of ingenuity: it required such disguises and many wild fancies to be introduced, to conceal his proposed vertical fire, being a practice already in use above 100 years.

It is difficult to believe that the author himself put faith in many of his conceits. Who does not at once perceive, that a musket being fired with 45° elevation, against an object 30 or 40 yards distant, (say from salient angle of the ravelin,) the bullet must of necessity range far beyond the point, or only be urged with a force little greater than it would receive thrown by the hand; and does not the slightest reflection lead to doubt of the powers of destruction of a ball of 4 ounces weight, ejected to the same or a less distance from a mortar 13 inches in diameter? (40) But admitting Carnot to have believed in his own statements, that such vertical fire will kill every man exposed to it, should not candour have led him to notice the effects such deadly weapons, when placed in the assailant's trenches, are capable of producing on the garrison? The greater space for multiplying such engines, and the superior power of feeding them with ammunition, is surely with the besiegers; and where can a stronger necessity exist on their side for crowding troops into a small space, than the obligation on the garrison to keep the ramparts fully manned, whilst in momentary expectation of the assault of the breach, and which may be prolonged at the pleasure of the assailants?

This re-action is carefully kept out of sight, and necessarily so; for if admitted—and who, on consideration, can doubt it?—the whole theory of rendering towns impregnable by the exclusive use of four-ounce balls in a moment falls to the ground.

Carnot has confined his examples of celebrated defences in modern warfare chiefly to places garrisoned by Frenchmen; otherwise, he might have drawn what are commonly esteemed strong arguments in his favour, from the late defences in the Peninsula by the Spaniards. It has been, however, with them as with the Turks, who, notwithstanding their military discipline and establishments have been so ruined that they cannot face their enemy in the field, still find themselves capable of an exertion behind the ramparts of a fortified place. Indeed, it was altogether owing to the large means thrown into their fortresses by the Spaniards, which, had their army been capable of fighting in the field, they would not have spared, that they were enabled to astonish the world with such brilliant defences. The merits of these efforts would, however, appear to have been greatly overrated, when we consider the trifling means used by the French for their reduction. Many of the places contained garrisons of equal, and some of superior numerical strength to the attacking force, and must consequently have fallen from the inferior discipline and art of the defenders. The garrison of Saragossa was an army of 30,000 men. That of Tarragona, 15,000 men; and at Badajos, a garrison of 9,000 men surrendered to 11 or 12,000 besiegers. This, however, is not meant to call in question the spirit of the Spaniards as a people. Their danger was brought about by a weak government; their escape has been chiefly owing to their continued perseverance, under the most discouraging circumstances.

On the whole, Carnot's treatise, as it stimulates the honour of a besieged garrison, and enumerates in a pithy and agreeable form all the old projects that may be put in practice to prolong their defence, may have its use, particularly if the place be attacked with petty means; but if a place be attacked by a suitable force, and in proper form, no operation of war can be so certain of success as a siege; and then will the garrison, who may have bloated themselves up with Carnot's high ideas of glory, find how little their utmost exertions can lead to his brilliant results, for they will most assuredly be overpowered, and have just cause to execrate an author, whose writings consign them to unmerited infamy.

November, 1813.

The foregoing observations were the first ever published, to throw doubt on the extravagant advantages claimed by Count Carnot for his theory of defence; which, at the time they were framed, was regarded as an important discovery in the science of warfare, and officers of all nations, but more particularly those of England, were receiving its dicta as something oracular.

It should be recollected that at the conclusion of 1813, France had, after twenty years of warfare, succeeded by force or fraud in obtaining possession of almost every great European fortress necessary to the extension or support of her military supremacy; and that a final struggle was about to commence, (in consequence of the disasters of her armies in Russia and on the Elbe,) which should overthrow her colossal power, or render hostilities with England interminable.

Count Carnot's literary talents and patriotic feelings had been ably exerted on the side of France, to throw a false glare over the value of her fortresses; and whilst his reasoning remained undisputed, it certainly added considerably, by the force of opinion, to the difficulties of their capture and her overthrow. He himself, in the concluding paragraph of his treatise, boasts that "DE L'ECRIT QU'ON VIENT DE LIRE, RESULTE JE CROIS BIEN EVIDEMMENT, CETTE VERITE TRANQUILLISANTE, C'EST QUE LES BARRIERES DE L'EMPIRE FRANÇOIS SONT ABSOLUMENT INEXPUGNABLES, POUR QUELQUE PUISSANCE OU REUNION DE PUISSANCES QUE CE SOIT, SI ELLES

SONT BIEN DEFENDUES: C'EST QU'UNE BONNE GARNISON ETABLIE DANS L'UNE DE NOS PLACES ACTUELLES, ET ANIMEE DU NOBLE DESIR DE S'ILLUSTRER PAR UNE DEFENSE MEMORABLE PEUT AUSSI LONG TEMS QU'ELLE SE TROUVERA POURVUE DE SUBSISTANCES ET DE MUNITIONS, TENIR TETE A UNE ARMEE DIX FOIS AUSSI NOMBREUSE, ET SE PROMETTRE ENFIN DE LA FAIRE ECHOUER, ET MEME DE LA DETRUIRE ENTIEREMENT, SI CELLE-CI S'OBSTINAIT A VOULOIR SURMONTER LA RESISTANCE".—*Count Carnot*, p. 438, 4to. Edit. 1812.

As an Englishman, seeing the fallacy of many of Carnot's statements, it became a duty to attempt to remove the unfounded prejudices they had created. To have done so by a critical or scientific examination of his work would have been an useless labour; for few of those for whom it was intended could have found leisure, or would have been willing, to follow a chain of close and dry calculation, or even a critical comparison of systems. Besides, the siege of Bayonne was about to commence under the unfavourable impression created on the English officers' mind by Count Carnot's writings, strengthened by a remembrance of the loss sustained at their previous sieges in Spain. Therefore, any attempt to be useful by throwing discredit on the new theory of defence must be immediate; and a light, popular, and somewhat burlesque exposure of the extravagance and fallacy of its arguments and conclusions was the consequence. In this light, it is hoped the foregoing observations have always been viewed, rather than as a studied refutation of its principles.

It has been shown that Count Carnot, writing to establish a particular object and not for the elucidation of truth, has stretched every point to favour his argument; and it is now candidly confessed, that the examination of his doctrine was not altogether free from a similar spirit. But as the illusions on the subject of defence have in a great measure been dissipated during the lapse of twelve years, the opportunity afforded by this edition is eagerly seized to throw aside every feeling of a controversialist, and submit a few impartial and dispassionate observations on the merit or demerit of the most prominent features or novelties of Count Carnot's Treatise on the Defence of Places.

These appear to be,

First.—An alteration in the trace or outline of the polygon.

Secondly.—The suppression of the interior revetement of the covered-way, known as the counterscarp.

Third.—To detach the scarp-wall from the rampart, and to make the latter without revetement.

Fourth.—Destructive personal conflict with the besiegers, by means of frequent sorties.

Lastly.—To make vertical fire the basis, rather than an accessary of the defence, it being deemed practicable by such fire to kill or maim every man of a besieging army.

With respect to the merits of the first, it behoves every officer to be diffident in offering an opinion—for even respecting the capabilities of resistance of systems of fortification, attacked and defended many hundred times, the masters of the art are singularly at variance.

The fact is, that the powers of defence of any particular trace are scarcely susceptible of nice analyzation; and experience, which should prove our guide, only renders the calculation more difficult, as no two sieges were ever carried on under precisely similar circumstances, or with precisely similar means, energy, or skill; and hence the striking difference in their duration, and the diversity of opinions, as to the strength of similar fronts, amongst practical men. Therefore, as Count Carnot lays much less stress upon his improvements of the outline than on his other changes, rather than cavil at those suggestions which are of doubtful value, let us do him the justice to state, that by means of an increased expenditure for retrenchments and casemates, he has added to the strength of particular portions of the polygon: and that if he has failed in tracing a perfect front, founded on the basis of Montalambert's system of casemated and reverse fire, he has by the attempt rescued a valuable suggestion from unmerited neglect on the continent, and rendered an important service to science, by directing the attention of military men to the means most likely to create a barrier against the growing powers of the attack.

Second.—The suppression of the interior revetement of the covered-way, known as the counterscarp.

If the object of fortification be, as hitherto understood, to place a very few men in a position not to be surprised, and which shall render them capable of resisting, for a certain period, the utmost efforts of many times their own force; then surely an obstacle such as the counterscarp-wall, which, of itself, without the exposure or aid of men, adds security to a garrison, and delays the period of their being vanquished, is of value.

But if places be fortified merely with the view of obtaining an advantageous field of battle, for a force only in a certain degree inferior to an invading army; then, if it can be shown that the covered-way being without a revetement gives a facility to the defenders of making sallies, which shall delay the progress of the besiegers for a period beyond that required to blow down the revetement, its omission is undoubtedly an advantage to the defence.

If these views be just, the suppression of the counterscarp resolves itself into being a bad measure for small places, or those which may possibly be invested when only moderately garrisoned, or which being near an enemy's country are likely to be surprised—but that it is advisable in very large fortresses, likely to be fully garrisoned when attacked, as being a pecuniary saving without detriment to the strength of the place. It is, however, worthy of remark on this point, that Napoleon, after the publication of Count Carnot's theory of defence, till the very moment of his overthrow, was constructing the magnificent fortress of Alessandria (meant to contain a corps d'armée, and therefore particularly adapted for an active defence) with a reveted counterscarp; and that, not a common revetement, but strengthened with very costly interior galleries for communication and reverse fire.

Third.—To detach the scarp-wall from the rampart, and to form the latter with an earthen slope.

The positive advantages to be derived from this construction are, that in an attempt at surprise by escalade, or an escalade by main force, the assailants have not only to mount a wall twenty-four feet in height, but have also to lower themselves down to a similar depth, which, perhaps, is the most difficult operation of the two.

Secondly.—When the garrison is strong, it admits of a second and well covered fire of musketry being directed on the covered-way through its loop-holes.

With respect to being breached, the detached scarp-wall stands precisely in the same predicament with the ordinary scarp-wall. Neither can be brought down with certainty, till the besiegers have established batteries on the crest of the glacis. That effected, two or three hours' firing, more or less, will not fail to level a wall of either construction.*

Its positive disadvantages are—

First.—That the rampart in its rear being left with an earthen slope, and consequently liable to be ascended without difficulty by armed men,* the smallest breach in the detached scarp-wall becomes a breach of the whole front; for the assailants, once through the wall, may spread to their right and left at pleasure, and no obstacle can be made to prevent their extending themselves, which shall not screen the assailants from the fire of the flanks, already limited in their effect by the construction, to a length little exceeding the trifling breadth of the space between the wall and the earthen rampart.

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* There is nothing in the experiment, recently made at Woolwich, to batter down a detached scarp-wall, which does not apply equally, or perhaps more, to battering down a scarp-wall of the usual construction. The latter is assuredly the most exposed to be struck from distant batteries.

The same observation also applies to an escalade by surprise. If only one ladder of communication, over any part of the wall, can be established, a whole column may be introduced into the space between the wall and the rampart, and the ascent be effected at the most favourable points of a whole front, or even of a whole enceinte. Again, from this defect of the rampart being separated from its scarp-wall, it follows, that in a regular attack it will only be necessary for the besiegers to make the breach in the wall wide enough for men to scramble through; for the struggle is *after*, not *whilst* the assailants are pushing through the wall. Therefore, in this construction, the besiegers, instead of being detained on the crest of the glacis, during the two or three days necessary to form a breach of a width to admit of a strong column of assault, not only in the escarp wall, but also in the clay rammed to a firm consistency behind the wall, (and which is usually a longer process than bringing the wall down,) may readily make a sufficient opening in the detached scarp-wall, for all the purposes of an assault of the rampart, in a few hours battering. And further, in the defence of this paltry breach, the garrison, instead of having, as in a front of the ordinary construction, to guard a known and very limited space, must be prepared to repel the assault along the whole unreveted rampart.

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* Earthen slopes, when first made, are difficult to ascend; but in a very few years, from the action of the sun, wind, rain, and frost, the burrowing of vermin and the growth of herbage, they become of easy ascent, and afford no security against the efforts of men. This appears to be an admitted fact; or otherwise why should every people, from the infancy of society through all ages, have been at the enormous expense of casing their cities with walls to ensure security: or why should Count Carnot have proposed any revetement, detached or otherwise, if earthen slopes were not to be assaulted? Further, experience shows, that whatever may be the condition of earthen slopes at the commencement of the attack of any front, random and ill-directed enfilade shot invariably cut them into steps, and render them of easy ascent long before the period of the assault; so much so as to leave little doubt, that by lodging a succession of shells filled with powder, having long fuses, so as to act as small mines, in any earthen rampart, it might be altogether annihilated.

An advantage claimed by Carnot for a detached scarp-wall over the usual construction is, that its fall creates no breach in the rampart; and consequently the retrenchment of the bastion, and the retrenchment behind the part battered, may have more front than if constructed in rear of the point to which the rampart is subject to be brought down by the fall of an attached revetement. This is surely incorrect, unless the comparison be made between the *scarp line* of the usual front, and the *rampart line* of Carnot's front; for can any one imagine a further bad effect which could possibly be produced by a breach of the usual scarp, having the same length and same position as Carnot's detached scarp-wall, which he has not prepared in advance?

By his construction, the rampart of the whole front is already thrown back as far as any breach in an ordinary revetement could render it necessary to retire the retrenchment, and all within the detached scarp is a breach ready formed. It is positively the reasoning of a man, who should recommend suicide, as a means of avoiding the chance of being put to death.

The practice of Napoleon at Alessandria was also in direct opposition to this doctrine of detaching the scarp-wall, not a single instance of such construction being found in that superb place.*

Fourth.—Destructive personal conflict with the besiegers, by means of frequent sorties.

Governors, engineers, and officers generally, who have had much experience in attacking or defending fortresses, and have recorded their opinions, invariably agree that the issue of a sortie should be deemed unfavourable to a garrison, unless they disable five or six times more in number of the besiegers than they lose of their own force; and the deduction they generally make is, that as since the adoption of parallels, places of arms, and other defensive expedients in the approaches, such advantage can seldom be gained over an equally brave and vigilant enemy, sorties in force should only be undertaken when there seems a probability of destroying some work or battery, which would seriously arrest the progress of the attack. Further, that a sortie must at all times be made with the utmost caution and address; that to be successful and advantageous, its advance must be unexpected and rapid, and its retreat instantaneous.

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* A detached wall along the centre of the ditch would be an excellent expedient for securing places from surprise or assault, at a moderate expense; as in consequence of having no pressure of earth to sustain, and being well covered from random shot from its proximity to the counterscarp, it need not be made for such purposes more than three feet thick.

This tenderness with respect to making sorties, is founded on the hard necessity which attaches to a beaten or inferior army of limiting the garrisons of its fortresses to precisely the numbers essentially necessary for the defence of the fortifications; and, consequently, every man lost from the commencement of a siege, is so much subtracted from the powers of resistance of the works.

It is an admitted fact, that a garrison of 5,000 or 6,000 men, or other such number, when reduced in amount one third, can with difficulty carry on the ordinary duties of a besieged place; and that when reduced one half, they are altogether unequal to the fatigue attending a vigorous resistance, invariably become dispirited, and are rapidly overcome: Count Carnot, under the view of encouraging a garrison to the degree of exertion he deems satisfactory, lays it down as a maxim, that, if the defensive troops fulfil the duties to be expected of them, they will at the conclusion of every siege be reduced to one half effective; one quarter being killed, and the other quarter being in hospital.

These premises furnish some slight data, on which to calculate the powers of destruction of sorties, and try the value of Count Carnot's statements. We will apply them to an octagon, garrisoned with 6,000 men, and stating the infantry at the liberal allotment of 600 per front, it will amount to 4,800, the remainder being cavalry, gunners, sappers and miners, commissariat, &c. The half of the infantry, (which force alone can be efficient in close sorties,) killed, wounded, sick, or disabled, at the end of the siege, will be 2,400: now granting that of this number the half shall have been disabled in personal conflict during sorties; that every sortie made by the garrison, without exception, shall have been fortunate; and that the average for every man of the garrison lost in sorties be six of the besiegers, we shall have a total of 7,200 men killed or disabled of the besieging force, by this nature of combat—many more than half of which number will have returned to their duty within a month.

This loss must be considered the greatest possible from sorties, and it is certainly considerable; but surely not of the appalling extent described in the treatise, for it must be recollected that every sortie, however successful, reduces the means and consequently the duration of the defence; so that, the more frequently sorties are made by the garrison, so much the more rapidly, and more surely, will their force be exhausted and the place reduced. On the contrary, the number of 7 or 8,000 disabled, out of an army of 35 or 40,000 men carrying on the attack, would not necessarily cause the force furnished for the duties of the trenches to be reduced a single man, or the energy of the attack to abate in the slightest degree for a single moment.

Therefore, as all the instances adduced by Count Carnot of the brilliant results of sorties are taken from sieges carried on previously to the construction of parallels, places of arms, and other defensive works in the approaches; and as he has merely proposed the means of facilitating the making of sorties, and not the means of rendering them more destructive than hitherto, we must consider the former opinions as to their use and value correct; and that his recommendation of constant warfare, man to man, can only be advantageously adopted in places where the garrison has a strong disposable force beyond that required for the duties of the works.

In the defence of places where the garrisons are limited to the exact numbers required for the fortifications, violent and desperate sorties are inadmissible—nay, impracticable; but frequent small sorties, rapid in their advance and instantaneous in their retreat, ever have and ever must be highly extolled and strongly recommended by officers of experience;—not, however, as the means of dealing out utter destruction to the besiegers, but as the best and surest expedient for interrupting and delaying the progress of the works of the attack, and consequently of retarding the fall of the place.

Lastly.—To make vertical fire the basis, rather than an accessory of the defence, it being easy by such fire to kill or maim every man of a besieging army.

Upon the eligibility of such a change, founded on such reasoning, doubts may reasonably be entertained, when it is considered with how little loss troops will work under the heaviest fire of round shot, shells, grape and canister shot through a whole night, even with little or no cover against it. At some of the sieges detailed in these Journals volleys of shells and showers of grape and canister shot appeared to carry destruction to the whole working party, and still the casualties were confined to an individual occasionally struck or blown up. Therefore, the protest of experience must be entered against the extremely murderous effects claimed for this nature of fire: also to its power of preventing troops working in the night; and those conversant in the practice of sieges well know, that three fourths of all exposed work is performed in the dark.*

This protest being made, the meed of unmixed praise is offered to Count Carnot for having attempted to raise the character and extend the use of vertical fire; for wherever it has been employed as an accessary to the defence, it has invariably been found eminently serviceable. His recommendation of bomb-proofs being erected expressly for the protection of mortars must also be unequivocally praised. The value of casemates for securing artillery has long been felt. Every engineer has more or less used them to increase the strength of fortresses, from the rude efforts of Vauban in his dark, damp, confined, and ill-ventilated tower bastions, till their perfection by the English at Gibraltar, Gosport, Dover, &c. at which places both men and guns have for years past been covered in light, spacious, dry, and airy bomb-proofs; as also in the galleries excavated through the rock at Gibraltar, Luxembourg, &c. &c. So that Carnot's ideas on these points may be said to have already received the sanction of experience at the period he published them to the world as novelties.

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* Whilst the batteries were constructing against Ciudad Rodrigo, volleys of four, five, and six shells, fell in quick succession throughout the night amongst the workmen without any very destructive effect; and at the attack of Badajos in 1811 and 1812, grape and canister shot as well as shells were showered from the castle heights in great quantities on the parties working in the plain beneath without materially impeding their progress. No fire could possibly be more vertical than that poured down on the heads of the workmen in the sap within a few yards of the escarp wall of the castle of Burgos; even stones and grenades were ejected by the hand on the very banquette; still the sap was completed, a gallery pushed from it under the castle, the escarp wall blown up, and a lodgement successfully formed on its summit.

With respect to the destructive powers claimed for vertical fire, Count Carnot having made his murderous calculations on charges of loose four-ounce balls fired from 13-inch mortars, it was considered fair in the original note to confine the consideration of vertical discharges to that nature of practice and to treat its effect with ridicule. A four-ounce ball is so evidently too light, and so many expedients might be devised to ward off any blow it is capable of inflicting in its vertical descent, that its greater or less force is not worthy of renewed discussion; particularly as the weight of the ball to be used may be doubled or quadrupled.

It is, however, to be borne in mind, that by so doing, even admitting Count Carnot's calculations to be correct, only one half or one fourth of the besieging force will be killed during the attack of a place, instead of the whole.

Under such an increased weight, and a more matured form, vertical discharges of balls become matter of serious consideration.

Experiments made at various places show, that balls of eight or even six ounces weight, fired at high elevations, fall with a momentum far too great for defensive armour to parry; and at fort William in Bengal, eight-ounce balls being put into tin canisters, having a strong wooden bottom 3½ inches thick, or. in other words, being made into canister shot, were directed with accuracy and force on the breach in the ravelin, from mortars at 45° elevation placed in the situation pointed out by Count Carnot.

Four-ounce balls made in a similar manner into canister shot were also fired with accuracy of range from the same spot (41).

Mortars are indisputably highly serviceable and highly destructive engines, both in the attack and defence of fortresses; and it is not the use, but the abuse of those engines which it is wished to decry. To preserve a happy medium on this point seems, however, most difficult either in theory or practice; for instance, the English, previously to their sieges in Spain, made a fire of mortars the basis of their attacks; and in those operations they discarded it altogether. So with the new theory of defence; because mortars fired with stones and small balls had fallen into unmerited disuse in the defence of places, Count Carnot suddenly flies to the opposite extreme, insists that they form the basis of defence, and that the trace of works should be made altogether subservient to their employment. Common sense, as well as the opinions of all practical soldiers and the recorded experience of above a hundred sieges, point out the mean to be the just course in both cases; but, perhaps, with this difference, that as guns should predominate in the attack, mortars and howitzers should be most numerous in the defence. For although vertical fire be unequal to kill or maim every man who comes within the sphere of its action, still it is highly destructive; and there does not appear to be any mode of using artillery in the defence of places, which combines so much effect with so much security to the instrument and to those working it; or which gives the same probability of its fire being preserved through the last operations of a siege.

To render mortars effectual, however, instead of spreading their fire over the whole surface of the attack, in the vain endeavour to destroy every man of the besieging force, it must be concentrated on the heads of saps, or other selected portions of the approaches, to retard their progress. Incessant discharges of large and small balls, shells, and stones in irregular succession, could not fail to have this effect in a ratio according to their numbers; and under such view, a provision of mortars with a supply of projectiles of every nature, both large and small, to the utmost practicable extent, should be placed in every fortress threatened with a siege, as being the most likely means of infusing a little vigour into the artillery defence of its works.

Since these observations were written, Count Carnot is dead, an exile from his native land; and his treatise on the defence of places having become general property, can no longer be viewed in France or other country, through the medium of national interest to exalt, or of national rivalry to detract from its merits, and it will in a few years settle to its just standard of value.

It is undoubtedly a very valuable contribution to the science of war. Carnot's principles of defence are in the main well founded; his reasoning, when not carried too far, just, and some of his proposed changes have great merit: besides which, all his doctrines are elevating and inspiring, and his object highly praiseworthy and patriotic, so that the perusal of his writings cannot fail to benefit every rank of officers.

His statements and deductions, however, must be received with great allowances, for it was the misfortune of Carnot to have wanted experience as a soldier* to correct an exuberant and fanciful imagination, which constantly led him to claim extravagant advantages and build extravagant theories on every change he suggested.

These, reared on plausible though fallacious arguments, and rendered captivating by stimulating and glowing appeals to the actions of former and the vanity of living soldiers, are likely to lead the young and enthusiastic to believe for a time, that in vertical fire and the resources of their own courage, they possess an impenetrable Ægis for covering towns. But when their judgment shall have been matured by experience, and they begin to weigh facts against declamation, they will not be able to conceal from themselves, that making every allowance for the many improvements suggested by this ingenious theorist, the means of rendering the defence superior to the attack of places still remain a desideratum.

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* Such at least was the opinion passed upon him by Napoleon at St. Helena.

CHAPTER V.

MEMORANDA RELATING TO THE MANNER OF CARRYING ON THE DUTY AND PERFORMING THE WORK AT THE SIEGES IN SPAIN.

The arrangements for carrying on the duty and executing the work at these sieges were as follows:—

The commanding engineer invariably visited the trenches three and often four times every twenty-four hours; and in person decided on and generally saw marked out the various approaches, parallels, batteries, &c. so as to keep a particular as well as general superintendence of the attack.

DIRECTORS.

The two officers of engineers next in seniority to the commanding engineer were styled directors; they relieved each other at noon, and remained twenty-four hours in the trenches, having the entire charge of the work, according to the following order.

"The directing officer on duty is charged with the execution of all works traced out, or ordered to be executed by the commanding engineer; the brigades on duty are to receive their orders from him, and he is to dispose of the officers and workmen in the trenches as he shall judge best. In all cases of unforeseen occurrences, (when the commanding engineer is not on the spot,) he is to use his own judgment to advance or withdraw parties, to push on approaches, or to suspend the execution of works, or to make other necessary changes, acting always as the circumstance of the moment shall, in his opinion, require.

" Should any cause oblige the director on duty to quit the trenches, the senior officer of the brigades on duty is to supply his place, and exercise the same powers."

BRIGADES OF OFFICERS AND MEN.

The other officers were divided into brigades of a captain and a subaltern each; their tour of duty in the trenches was for eight hours, and their hours of relief mid-time between the relief of the working parties. Thus when the workmen relieved at eight P.M., day-light, and noon, the engineers relieved at four P. M., midnight, and eight A. M. The advantages arising from this arrangement were that the relieving officers found all the parties at work, and had time to make their observations, and become acquainted with every thing going forward before the fresh working parties came into the trenches. Further, by commencing the roster at four P. M., the officers who had to lay out the night's work had ample time to see the ground and make their arrangements before dark. The brigades were composed of two officers only, because it was found more easy to apportion the number of officers to be on duty in the trenches to the quantity or difficulty of the work to be executed, when in that proportion, than when the brigades were composed of a greater number.

Thus frequently on breaking ground the first relief was four brigades, that at midnight three or two, and that at daylight two or one. Almost invariably the relief for the first part of the night (when fresh ground is usually broken) consisted of one brigade more than was on duty at any other period.

The officers of the line acting as engineers were posted to the several brigades in the proportion of two or three to each.

To each brigade of officers were attached a certain number of non-commissioned officers and privates of the corps of Royal Military Artificers or of artificers from the line, to act as overseers, and these men invariably went on and came off duty with the officers of the brigades; that is, the officers of engineers, those of the line acting as engineers, and the men acting as overseers of each brigade, formed a distinct and independent body; the senior officer of the brigade having the unrestricted charge of it, and being responsible for the whole of its numbers, and no interference from any one being admitted with his brigade arrangements.

MINERS AND CARPENTERS.

The miners and carpenters were divided into squads of ten each, and were employed by a separate but regular roster, either in the park or trenches, as the nature of the work required their exertions.

SAPPERS.

The soldiers of the line acting as sappers were divided into three divisions of sixty-four men each, under the command of one or more of their own officers,* and the divisions were subdivided into brigades of eight each. A non-commissioned officer, or an intelligent private who could write, was placed in charge of each brigade to keep the pay list, and stimulate the men to perform their duty. The divisions were numbered one, two, and three, and the brigades in each division from one to eight.

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* It would be highly unjust to close these Journals without adverting to the merit of the officers of the line who volunteered as engineers and sappers at these sieges. All of them were zealous, gallant and highly useful; many intelligent, and some acquired considerable practical knowledge. They shared the fatigues and dangers of the trenches and assaults equally with the other engineers; and as like them some untimely fell and many were severely maimed, they have equal claim to individual mention, and nothing but the want of a correct list prevented their names being specified.

One or more divisions of the sappers were always in the trenches, and were relieved at the same time with the brigades of engineers by the brigade major's roster; when in the trenches their further subdivision of duty rested with the director. It was found a bad arrangement to have divided the sappers into three bodies, as their periods of working being eight hours, it required constant attention to put only half a division on duty every fourth relief, (which was frequently found a great inconvenience to the works,) to prevent the same men invariably returning at the same hours: nor can men properly be continued on such hard duty at three reliefs for any length of time; they require at least four reliefs.

DUTY ROSTER.

The general tour of duty for the brigades of engineers, sappers, artificers, &c. was regulated by a roster kept by the brigade major, and the detail for twenty-four hours, from four P. M. one day to four P.M. the next day, was always issued every morning; and in four attacks it only occurred once, (from three officers being wounded in the trenches during the same relief,) that any alteration was required to be made after the detail of duty was issued

The following is a copy of the roster during the attack of Ciudad Rodrigo.

Roster during the Attack of Ciudad Rodrigo.

	8th Jan.			9th.			10th.			11 h.			12th.			13th.			14th.			15th.			16th.			17th.			18th.			19th.		
	4 P. M.	Midnight.	8 A. M.	4.	12.	8.	4.	12.	8.	4.	12.	8.	4.	12.	8.	4.	12.	8.	4.	12.	8.	4.	12.	8.	4.	12.	8.	4.	12.	8.	4.	12.	8.	4.	12.	8.
1st Brigade	■			■			■		■			■			■		■		■																	
2d do.	■			■			■			■		■			■		■			■		■		■		■			■			■		■		
3d do. *																																				
4th do.		■				■			■		■			■			■		■			■			■		■		■			■			■	
5th do.		■			■		■			■			■			■		■		■			■		■			■			■			■		
6th do.			■		■			■		■			■			■		■			■		■		■			■		■			■		■	
7th do.				■		■		■			■			■		■			■			■		■		■		■			■				■	

* Officers did not join.

ENGINEERS PARK.

The park was usually formed in the most convenient spot, concealed from the view of the place by some rising ground, at the distance of eighteen hundred or two thousand yards; care being always taken to select a ravine from which the communications from the rear to the park, and from the park to the trenches, should be practicable in the worst weather and easily to be found in the dark.

The officers of engineers, the officers acting as engineers, the men brigaded as sappers, miners, and artificers, and the field-train commissariat, encamped or bivouacked in a regular manner, in the vicinity of the commanding engineer's tent; and the tools, fascines, gabions, platforms, splinter-proof timbers, scaling ladders, sand-bags, small stores, &c. &c., as brought into the park, were regularly piled, or arranged in rows of fixed numbers, so as to be counted in a moment, or a demanded number issued without confusion in the dark.

The saw pits and places of work for the carpenters, the forges for the repair of tools, and the spaces for re-tying and re-making damaged fascines and gabions, and generally for every species of labour which could be performed out of the trenches, were also established within the park boundary line, for the convenience of overlooking the workmen, and the security of the materials.

The senior of the engineer field-train had charge of the stores, and was never permitted to quit the park during the whole period of the siege; a clerk, or conductor of stores, under his orders, was constantly on duty, night and day, with a certain number of men, especially selected and appropriated for this service, who regularly relieved each other, by roster, at stated periods, and who noted down or issued every store as received or ordered into the trenches.

C. E. O.

Elvas, March 15*th*, 1812.

" Mr. Wildbore and Mr. Millar, clerks of stores, to be in charge of the park, with two non-commissioned officers, and ten rank and file of the corps of Royal Military Artificers (now Sappers); one clerk of stores, one non-commissioned officer and five rank and file of the above, to be constantly on duty in the park."

The park was under the exclusive orders of the brigade major, and no one was allowed in any manner to interfere with the stores or persons attached to the park, nor was any requisition permitted to be complied with till countersigned by the brigade major; unless on any pressing emergency, when that officer was in the trenches or on some distant duty, in which case the senior of the field-train used his discretion.

These restrictions were positively necessary to make the limited quantity of stores at each siege suffice, and were found rather to advance than delay the service.

Unless the situation of the park be extremely well concealed, eighteen hundred yards is rather too near the place; for at Badajos at that distance, the rolling shot and occasional shells which came into the park were a source of considerable annoyance; and it should not be forgotten that the cavalry of the garrison in a sortie absolutely rode through the park, and had the opportunity of burning the whole supply of fascines, gabions, &c.

ENTREPOT.

A little in rear of the mouth of the trenches, an entrepot was established, at which a non-commissioned officer attended, for the purpose of collecting stray and broken tools from the trenches; and every thing returned from the trenches to the park was, in the first instance, deposited in this entrepot, till it could be sent for at a convenient moment by a working party from the park.

This arrangement had its origin at Ciudad

Rodrigo, in consequence of its being a great delay and additional fatigue to the troops relieving at mid-day, to make the detour of the engineers' park to deposit the returned tools and stores.

Such an entrepot will however, under all circumstances, be found of the greatest use.

WORKING PARTIES.

In the early part of the day the commanding engineer decided on the work to be performed during the ensuing night, and the brigade major having calculated the number of men it would require, carried the detail to the adjutant general, who gave orders accordingly to the several divisions or corps, to the extent that the strength of the besieging force would admit.

On this demand for workmen the strength of the guard of the trenches was regulated, so as to form together the force deemed necessary in the trenches; the guard being more or less numerous according to the number of workmen required.

These points being ascertained every other arrangement followed as matter of course.

BREAKING GROUND.

A certain number of brigades of engineers were ordered for duty, and the working party being told off into a similar number of divisions, the tools were laid out in separate portions in the park, according to the strength of the several divisions of workmen. As soon as it became dusk, the commanding engineer, having previously well reconnoitred the ground, went with the officers of engineers for duty, attended by a few of their overseers, and pointed out to them the line of the parallel and the returns of the approaches to it. The officers then divided the extent of the work between them, beginning at one end of the parallel, according to seniority; and each taking for his portion of it a certain number of yards, according to the number of men contained in his division of workmen. He then planted a picket at each end of his portion of work, and ran a white line from one to the other; and that the pickets might be readily found when it became quite dark, he made one of his overseers lie down at each; and in like manner were all the returns of the approaches marked out. Whilst this was executing, the sub-officer of each brigade, after having well remarked the situation of his portion of the work, so as to be certain of finding it in the dark, returned to the place of assembly of the working party, and took charge of his division. The whole were then marched in one body to the place of breaking ground, either to the centre, right, or left of the intended parallel, as the country offered most facility for advancing. When that happened to be in the centre the workmen were filed in two parties to the right and left; but, to avoid confusion, they were, whenever practicable, filed along the whole length of the parallel, say from left to right. Then the officer with the leading section marched on till he arrived at the picket on the extreme right; the second officer halted his division when the head of it arrived at the right picket of his brigade; the third officer halted his at the right picket of the third brigade; and so on with the other divisions. Without this precaution of halting each division separately, as the men march in much closer order than they work, they would all be crowded together, and in the dark it is almost impossible to make men extend themselves into regular distances. Each man on marching out of the park carried a fascine four feet in length, which, on the division halting, he placed down parallel to the white line, at two feet in front of it; and as he afterwards only opened the ground to the white line, and threw the earth beyond the fascine, a space of two feet was left for the banquette.

The workmen were placed four feet apart, and were expected at that distance to complete before the hour of being relieved a trench three feet in depth by three feet six inches wide at bottom, being something more than a cubic yard and a half of excavation. Frequently, however, they did not complete the allotted excavation; which could only arise from want of due exertion, for under a heavy fire they never failed to perform the same quantity of work in three hours. It would, therefore, be a desirable regulation to enforce, that, on breaking ground, no relief should take place till an assigned portion of work had been completed. The workmen under the present system of relieving them at a fixed hour, whether they have done much or little, feel assured that they shall quit the trenches before day-light, and are not interested that proper cover should be obtained against the fire of the place, which seldom opens with much effect till that period.

This regulation for a fixed quantity of labour being performed by each relief might be beneficially extended beyond the night of opening fresh ground; and, perhaps, even a system of task-work might be introduced generally for the works of an attack, it being invariably found that the men laboured with the utmost ardour and cheerfulness through five or six hours to obtain a remission of the remainder of their period of duty in the trenches.*

With each division of workmen a number of spare tools should be sent, as it will unavoidably happen that in some parts of the line four or five men will be found working together with the same nature of tool; also in some parts the ground will prove soft and require shovels only, and in other parts so hard as only to be moved with pickaxes. To attempt to change the men or tools in the dark is productive of endless confusion; so that where the supply of tools will admit of it, each man should carry a shovel and a pickaxe.

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* The following order is inserted to show that a system of making troops labour by task-work received the sanction of, or rather emanated from, the Duke of Wellington.

MEMORANDUM, *April 9th*, 1812.

Colonel Fletcher is requested to order an engineer officer at Badajos, to assist Major General Power in getting the ladders out of the ditches, &c. and collecting them; in placing the chevaux-de-frize upon the breaches so as to prevent all ingress and egress by them; and in shutting the barriers of the covered way, outworks, &c.

An engineer officer to be appointed to superintend the rubbing out of the trenches; Colonel Fletcher to call upon General Power to supply him with a working party of 500 men at twelve this day for that purpose; this same number to be supplied to-morrow at five in the morning, to be relieved by the same number at twelve, and to continue in this manner till the work will be finished.

This work should be tasked, and the men kept at work till they will have finished their task.

W.

At the distance of the first parallel, or 600 yards from the covered-way, there is in high latitudes a considerable period of partial obscurity, during which the work may be seen to be traced, those so employed not being observable from the garrison; but in southern latitudes the day is so immediately succeeded by darkness that not a moment is to be lost in fixing the different points. After complete darkness it is impossible to trace any line with certainty, for even the very bearing of the front to be attacked becomes doubtful; and on such occasions if a man be not left lying down at the different points, or a white line used, the trace may remain undiscovered for the whole night.

To enable the engineers to trace out the work in the dusk with security to themselves, it is desirable that the investing corps should, at sunset every evening, close upon the place, and that it should, even in the day time, hold all such advanced posts as it can without loss of men. During the time of fixing the marks in the dusk, sentinels must be advanced in front of the officers so employed, and a strong support be posted near at hand, or a cavalry patrol might sweep the whole party into the place.

Reconnoissances of other points of the fortress should be made daily during the investment, and more particularly of those parts of which the garrison show a jealousy by much firing. It will frequently serve to prevent suspicion of the intended point of attack. At Badajos, both in 1811 and 1812, officers were employed with much show to reconnoitre the south fronts, whose motions were jealously watched and interrupted by fire, men being even sent out of the place to occupy some ruins to prevent their near approach on that side; whilst underneath the castle the commanding engineer, attended by another officer, was actually pacing the intended parallel uninterruptedly, under the show of being officers regulating the advanced sentries. At one point this was done close to a French picket, which, by a sort of tacit agreement, quietly occupied in the day time a house beyond the glacis, retiring from it every evening on the advance of the investing pickets, neither party ever firing on the other.

COVERING PARTIES.

The covering party preceded the working party, and was conducted by an officer of engineers, selected for that purpose from those who had accompanied the commanding engineer when he laid out the parallel in the dusk; and who, having made himself thoroughly acquainted with the roads, had returned to the place of assembly of the troops, which was usually at the engineers' park. In these sieges the covering party was always placed a few yards in front of the workmen; but of course the general officer of the day places it wherever he thinks proper, either in front or rear of them. It would however seem most advisable to place it in front, as the natural weapon of the British, and the most effectual in the dark, is the bayonet, and the order of the troops must necessarily be destroyed in crossing over the work and through the workmen to use it. Again, the covering party being in front of the workmen gives them a confidence, which is essentially necessary to their attending to the work. For the same reason it is better that the workmen should have their arms, for when without them they disperse on the slightest alarm, and it is very difficult to collect them again; but such is the natural intrepidity of the English soldier that, with his arms, he never thinks of moving off. The workmen carrying their arms is admitted to be a great impediment to the work in many respects, but that is considered as being much overbalanced by the confidence it inspires amongst them and the real security it affords.

The battalions, as soon as posted, were made to lye down, having small platoons of men placed in their front, with advanced sentinels. The sentinels had positive orders not to fire on any account, and the squads were not to fire unless assured of a sortie advancing in force.

GUARD OF THE TRENCHES.

The guard of the trenches most usually relieved at noon, or as soon as the men had dined, and remained on duty twenty-four hours. It would probably be better not to send the guard into the trenches on the first day after breaking ground, as there is seldom sufficient cover for them and the workmen also; and the trenches being still more than 500 yards from the place, and literally not worth destroying, whilst their distance takes away all chance of surprising the workmen, the garrison are not likely to make any vigorous sortie. Therefore, a few steady men being placed in the parallel, the remainder of the guard might till evening be kept under the nearest cover, in readiness to advance if required. Such an arrangement would save casualties and give room for the workmen to exert themselves.

Some valuable assistance was obtained on more than one occasion in forwarding the work by a portion of the guard aiding the working party. As exercise is beneficial to the men in cold and damp weather, this aid should be freely asked by the engineer, and willingly granted by the officer commanding in the trenches, when it can be done with safety.

SCALING LADDERS.

The scaling ladders in six feet lengths, supplied from England, were found too weak to support the ascent of a body of men when joined more than three lengths together, and they were never used for any purpose of escalade or descent exceeding twelve or fifteen feet. The ordinary ladder used by workmen in England was found in all respects the best machine for escalades, and where they can be made or procured they should have the preference over any complicated machine.—See NOTE 21.

As the English, however, constantly attack places with only the resources to be drawn from their ships, it is highly desirable that some more efficient but equally portable machine with the old ladder should be introduced as a store into the service, to be forthcoming in whatever situation required.*

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* The jointed scaling ladders were successfully used in four lengths resting against the earthen slope of the hornwork

ENTRENCHING TOOLS.

The entrenching tools of the common English pattern were far too large and heavy. The pickaxes, particularly, from the length of their helves and iron heads, caused many accidents in the night amongst the workmen when thickly crowded; and the Portugueze could scarcely use them or the heavy shovels.

The portability of tools for field-service is a far more important consideration than their fitness to enable men to labour hard; for military workmen rarely exert their utmost strength, and many of them, from their former habits of life, scarcely know how to handle either pick or shovel.*

The expenditure of tools at a siege is alto-

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stormed and carried previous to opening the trenches at Burgos, and supported men on them for a considerable period from the upper to the lower stave. It was also by means of these short portable ladders that the palisades in rear of the same work were surmounted. These facts are mentioned to show the value of scaling ladders as a store; for there had not been time, nor were there materials at command, to have made other ladders on this occasion, had not these been forthcoming with the field-depôt.

* The French entrenching tools are so much lighter than the English, that in the Peninsula, wherever French tools were found, they were eagerly seized for the field-depôt equipment, and an equivalent weight of English tools abandoned, by which exchange one-fourth was sometimes added to the number of tools carried by the mules.

gether surprizing, and unless it be well understood and provided for may lead to very serious difficulties. This expenditure is occasioned by a great number being broken from the awkwardness of the workmen, as well as from the fire of the place. A great number are also buried in the night, and at every successful sortie the enemy carry off every thing they can find.

The expenditure of tools at the attack of Ciudad Rodrigo was nearly one half of the number issued; at the last siege of Badajos above that proportion, and at Burgos the number expended exceeded 2000. It appeared from a return found at Madrid that the French brought up for the attack of Zaragossa 17,527 entrenching tools, and expended 7,306; 30,000 spare helves, and expended 14,000; 370,000 sand-bags, and expended above 100,000. When the entrenching tools are abundant, and the relief of the engineers is at the intermediate hours between the relief of the working parties, the party leaving work should bring their tools out of the trenches and deposit them in an entrepot near the mouth of the trenches, instead of ranging them along the rear of the parallel or trench in which they may have been working, as is usually practised. By such proceeding the engineers on duty in the trenches can, previously to the arrival of each relief of the working party, arrange and proportion the tools in the numbers they propose to divide and employ the fresh workmen, which can rarely be the same for two successive periods. This arrangement of an entrepot was carried into effect at Ciudad Rodrigo, and was found particularly beneficial at the evening relief, for the night-parties seldom worked at the same spot as the day-parties; the former being usually employed to open fresh ground, and the latter merely to improve the work commenced in the night. It was found also to prevent the endless confusion and delay which invariably attend collecting and regularly dividing the tools after it becomes dark. At Flushing nearly the work of one relief was lost by extreme darkness preventing the tools being found, although lying in the trenches at a few yards from the spot where search was making for them.

GABIONS.

After repeated trials it was found that the best size for gabions for the sap is 3 feet in height by 18 or 20 inches interior diameter between the stakes.

The gabions, which were all of green materials, were at first made 3 feet in height by 2 feet 3 inches in diameter, those of oak weighed

90 lbs. and those of willow 80 lbs. The former were found perfectly unmanageable; even at 2 feet, those of oak averaged 85 lbs. and those of willow 70 lbs., and were found still too heavy. Gabions of 18 and 20 inches were very handy, and answered every purpose.

Large gabions for the heads of the sap were made 5 feet 6 inches high by 4 feet 8 inches diameter, and paid for at the rate of 15 vintems each, the vintem being 5.400 farthings.

FASCINES.

The fascines were made 6 feet, 9 feet, and 18 feet in length, by 1 foot in diameter. The former averaged 50 lbs. weight, and were found the most useful under a heavy fire. The latter being made of green boughs and twigs were much too heavy.

The tracing fascines were made 4 feet long and 9 inches in diameter.*

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* No general rule for the size of materials and implements can be laid down, but in arranging the dimensions of fascines, gabions, splinter-proofs, &c. for any service, it behoves a British officer to consider well the nature of the trees and shrubs to be found in the country where the army may be acting; or otherwise, following the rules taught in books, he will find himself occasionally in a sad dilemma. For instance, in the early part of the war it happened, in making the preparations for the attack of a post in the West Indies, the superior density of the

The gabions and fascines were all made by working parties of the troops, who were paid a fixed price for each nature.—See vol. 1. p. 99.

SAND-BAGS.

Sand-bags are an excellent substitute for gabions and fascines, and are consequently a most highly valuable article for rapid operations where little time is allowed for previous preparation, and they proved of the greatest use at these sieges. Most of the bales were more or less damaged by wet which had penetrated through their covers, and in consequence many of the bags were rotten; but those in good condition answered extremely well for all the ordinary purposes of sand-bags at a siege. As they sometimes burst in wet weather, it might be as well to make them in future of rather stronger canvass, but the coarser the better, as

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wood, peculiar to tropical climates, not being adverted to, the fascines and gabions were prepared of the usual dimensions, and in consequence, none of the original supply could be made available in the trenches from their great weight.

Fascines and gabions made in summer will also weigh more than those made of similar boughs in winter.

Where brushwood or other material is scarce, or difficult to be procured, it should be recollected that the content of fascines of equal lengths being as the squares of their diameters, much will be saved by making them of small bulk. In that case, however, to give them the necessary firmness, they must be carefully and wellmade up with spun-yarn.

the workmen even now purloin them out of the trenches in prodigious numbers during the dark for the uses to which they can convert the material.

Further, as it frequently happens in our maritime descents, that troops, thrown on a barren and arid coast from ships, have instantly to attack a fortified post without other means than those brought with them, and sand-bags become their only resource for forming cover; it is extremely desirable that they should be of so little value as to admit of their being used in any number, and for any purpose, without hesitation on account of the expense.

As sand-bags at a siege are rarely required to last more than a week, might not two descriptions of bags be introduced into the service—one made of coarse material of the cheapest nature for the *rough* work at sieges, and a second of a superior quality for field defences and the nicer and more exposed work at sieges?

PLATFORMS.

The platforms of the pattern hitherto supplied, viz. 18 feet long, 9 feet in front, and 18 feet in the rear, with sleepers 9 inches square, and covered with three-inch plank, were found to be unnecessarily large, and so weighty, 33 or 34 cwt., that under a heavy fire it was impossible to lay them. The sleepers were reduced to less than half their thickness, and shortened four feet; and then, being solidly bedded down, were found to bear the recoil of the most continued discharges of 24-pounders.

If platforms be made 15 feet long, 8 feet in the front, and 12 feet in the rear, laid upon 5 sleepers, 6 inches by 5, covered with fir plank of 2½ inches, or perhaps 2 inches in thickness, they will prove adequate to support any firing, and not be much more than half the weight of those hitherto provided. Indeed, since it has been fully ascertained that the recoil of the piece does not commence till the shot has quitted the muzzle, it would seem that much of the labour now bestowed to form large and accurate platforms for guns might be spared, as the correctness of the fire is only affected by the level of the points on which the piece stands at the moment of being fired.

It was found a very difficult task to keep each platform distinct and to recognize in the dark the mark on each plank, both of which are essential in laying down platforms wider in the rear than in front. To effect this, each platform was sent from the park into the trenches by a distinct party of workmen, who were made to carry the planks in the order they were intended to be laid down; but notwithstanding this precaution, it sometimes happened that a casualty amongst the bearers caused a plank or two to be dropped by the road, which, on more than one occasion, delayed the completion of the platforms till after day-light.

After several experiments made at Woolwich it has recently been decided, that an oblong platform 10 feet in width by 17 feet in length, having 5 sleepers 6 inches by 5 inches, which weighs only 17 cwt., is every way suited for batteries to breach or enfilade.* If this prove so, it will simplify laying down platforms exceedingly, as then every plank will be available for every platform. It will, however, require the utmost circumspection and accuracy in marking the exact line of fire before dark. Four carpenters, working with ordinary exertion, unloaded a platform of the latter dimensions from a waggon and laid it down in readiness to receive the gun in two hours, and the same men took it up and reloaded it on the waggon in one hour.

Platforms fixed down with screws, if the precaution of greasing the screws be attended to, may readily be removed any number of times without injury; but it requires a considerable longer time to lay them than when spiked down, and if the screws be not well bedded in grease they become immoveable after a few day's wet or damp weather.

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* Perhaps on further trial fifteen feet may be deemed sufficient length, and nine feet sufficient breadth, which would still further reduce the weight.

The use of screws, by avoiding the noise occasioned by spiking down planks, might in some situations prove highly advantageous; therefore a proportion should be sent with every equipment.

As, in consequence of the English using a very superior nature of platform to those of other countries, the completion of the batteries at every siege is retarded by some hours, might not some more simple mode of fixing them down be adopted with advantage?

TRACING LINE.

In order to discover the trace of works to be erected in the night, it is very desirable that a light coloured line should be used to mark their outline. Stripes of white coarse cotton, about two inches broad, answer very well for such purpose, and are visible on the ground in the darkest night.

Several thousand yards of white line should be provided for each siege, as it very soon wears out. The quantity of white line which could be procured at these attacks being very limited, in order to preserve it, each brigade was furnished with its own particular portion, and carried it into the trenches and brought it out with them at each tour of duty.

When the whole of the work marked out by the white line is not executed, care should be taken to remove the line before day-light, as it is a very conspicuous object to the garrison, who never fail to mark its direction, and concentrate their fire upon it as soon as the workmen commence the next evening. When the approaches are advancing up the glacis, the removal of the line should be particularly attended to, as the following fact proves.

At the last siege of Badajos, Captain Ellicombe, being on duty at the advanced sap on the glacis of the lunette of St. Roque, went at dusk to adjust the lines of direction of the sap for the night. He found those portions already begun to be in a very good direction, quite clear of enfilade; but the return marked by the white line, and not commenced, he found to fall directly upon the castle. On being relieved and coming back to the camp, Captain Ellicombe mentioned what a lucky discovery he had made, of the return of the sap to be executed that night having been, through some mistake or accident, traced in the direct enfilade of three guns. This was considered to have been an accident of the white line catching unobserved in the dark against a stone or bush, and the circumstance was related, and no more thought of, till on a perusal of some public documents found in the place, the two following orders appeared.

28th March.

L'ennemi ayant tracé un boyau au moyen d'un cordeau, qu'il a placé la nuit dernière, pour cheminer sur le glacis de la lunette St. Roque, M. le Lieutenant Mailhet du génie se rendra à la nuit tombante à la place d'armes saillante de cette lunette, d'où il enverra le mineur —— pour lever le cordeau à l'extrémité de gauche et lui donner une direction plus rapprochée de la lunette de manière à pouvoir enfiler au jour le travail qu'il aura exécuté: cette opération délicate, qui fera perdre une nuit à l'ennemi, doit être dirigée avec tout le soin e l'intelligence possible.

LARMARRE, Colonel du Gènie.

G. O. *29th March.*

Le Sieur Stoll, caporal de mineurs, a aussi fait hier un trait de bravoure bien digne d'être cité. Ce militaire à la nuit tombante a été deranger de place le cordeau que le génie ennemi avait placé le jour pour le travail de la nuit. Le Général Gouverneur a ordonné qu'il recevrait une récompense pécuniaire de 200 fr. et que sa belle conduite serait soumise à S. E. Monseigneur la Maréchal Duc de Dalmatie.

A supply of white line will not do away the necessity for the usual provision of hambro' line and cord.

BATTERIES.

. The best situation for batteries is in the parallel, as by placing them there their position may be determined at day-light of the morning, after breaking ground, and fourteen hours will thereby be gained, besides profiting by the excavation of the night. The terre-plein of the batteries in this case will be sunk three feet; which should be made the level of the *bottom* of the sleepers of the platforms, as an excavation exceeding that depth retards the completion of the battery, from the disproportionate quantity of soil it gives to that required for the parapet, which it is unnecessary to make of a greater thickness at the top than ten or twelve or at the utmost fourteen feet. Batteries of this construction and profile may readily be completed to open in thirty-six hours, numbered from day-light of the morning after breaking ground.

Since the above was written, the experience gained in the sieges carried on by Prince Augustus of Prussia in France, after the battle of Waterloo, has led to a belief that the first batteries at a siege may always be commenced at the time of breaking ground, and be prepared to open on the following morning, that is, in twelve or fourteen hours.

Such may be the case against inefficiently garrisoned and badly armed places, when attacked in the middle of summer, and the sun scarcely descends 18° below the horizon; but it will be found utterly impracticable against places strongly garrisoned and efficiently armed, where the governor will not permit a close reconnoissance of the site of the intended parallel. It will frequently happen on a dark night that the officers, so far from being able to fix the exact prolongation of the lines of the faces and flanks to be enfiladed at the time of breaking ground, will be in a state of doubt and uncertainty as to the very bearing of the place itself. On these occasions, the most extraordinary and most contradictory opinions are constantly heard as to the localities, and happy is an engineer when confident of being even pretty near the selected spot.

The time necessary for throwing up batteries cannot but be affected by the circumstances under which they are formed, the fire to which they are exposed, the nature of the soil and the materials at command, and must vary at every operation.

Thus the Prussians in summer erected batteries in twelve or fourteen hours against places almost destitute of gunners; and four days were found necessary for their erection during the frost of January and under the powerful and well-directed artillery fire of Ciudad Rodrigo.

Sand-bags form good revetements for the interior of batteries when built with a slope of one fourth; with a less slope they burst and fall on the least rain.

Batteries to breach, or for direct fire, cannot frequently be sunk, and the ditch alone affords the mass of earth for the parapet; when such batteries are within effectual musketry range of the place, it is expedient to plant a row of gabions along the front of the ditch, and to fill them instantly on commencing the excavation; such a precaution will save many casualties amongst the workmen.

EMBRAZURES.

The best lining for embrazures are the eighteen feet fascines, as when reveted with sand-bags the bags constantly burst from the explosion and take fire. It was found an excellent expedient to form the interior of the cheek of the embrazures, that is, the part of the opening next the gun, with very strong gabions, made larger than the ordinary size, and placed so close to each other, as only to admit the muzzle of the gun between them. This, besides giving great strength to the interior angles, protected the gunners very much from the enemy's musketry.

In fact, after some hours of the quick firing, which is now practised from heavy guns of iron, the embrazures become utterly shapeless beyond the muzzle of the piece, and all that can be hoped is to preserve two or three feet of tolerable cover next the interior of the battery. During these sieges, the embrazures of the several breaching batteries were fresh lined every night; and though every expedient was adopted to give them strength, still they were invariably found on the ensuing evening to have returned to a shapeless hole.

The embrazures were placed twenty feet from centre to centre, when the space for the battery was not confined; but eighteen or even sixteen feet will be found a sufficient distance when saving of space is an object.

Most of the batteries at these sieges were thrown up as a solid mass, and the embrazures cut through when the guns were mounted, in consequence of the destructive fire to which they were exposed; but where the fire on a battery was moderate, it was found most expeditious to form the embrazures simultaneously with the parapet.

TRAVERSES.

Between every two guns, a splinter-proof traverse of sand-bags was built up: it was made perpendicular to the parapet, ten feet long, and one foot distant from it at the base; the breadth at the base, and consequently its height, being regulated by the space between the platforms, so as to insure a thickness of two feet at the top of the traverse. To have ample room for these traverses, it is best to place the first two guns eighteen feet from the epaulement; then leave a space of twenty-two feet, then eighteen feet, and so on alternately, placing the traverse in the larger interval. These traverses in the batteries were of essential service, saving many lives, particularly at Rodrigo, where the number of shells thrown into the batteries was surprisingly great.

MAGAZINES.

Splinter-proof timbers for magazines were cut twelve feet in length, and from eight to ten inches in breadth and thickness, and were placed against an epaulement, parallel to the place, at an angle making the base equal to half the height. They were then covered with a tarpaulin, extending well over the top of the epaulement, over which were laid one or two rows of filled sand-bags, so as to prevent the possibility of the tarpaulin being cut by splinters of shells. A second tarpaulin was usually thrown over the exterior in rainy weather. On this construction the magazines were found to be perfectly dry and sufficiently spacious, and of their strength no doubt can remain, as the sand-bag covering was frequently knocked off by large shells, and in no instance were the splinter-proofs broken.

The best situations for magazines are on the flanks of the batteries. Nothing can be worse than to place them in the rear of the centre of a battery, as then every cartridge has to be carried along the most exposed and dangerous part of the battery, and the number of accidents and casualties which arise therefrom, is very great indeed.

The artillery always preferred to have two magazines formed, rather than to have one exceeding ten or twelve feet in length: when two were made, they were placed one on either flank. A situation which was found to answer extremely well for the magazines of batteries constructed in advance of a parallel, was at the extremity of a cut, made perpendicularly through the parapet of the communication from the parallel, at ten or twelve yards before arriving at the battery. The level of the floor of the magazine was then kept as nearly on the level of the approach as would admit of its being drained; and the foot of the splinter-proof timber was sunk twelve or fourteen inches under it. In this situation, an accidental explosion of the magazine will not injure the battery.

PARALLELS AND APPROACHES.

The first parallel was made ten feet in width clear of the banquette, which is more than absolutely necessary. Against a weak garrison, seven feet will usually be found sufficient; but when of that dimension, if the country be such that carriages cannot cross over it, but obliges them to move along the parallel, the precaution must be taken to make various portions of the parallel sufficiently wide to admit of two carriages passing each other, or occasional stoppages will occur to interrupt the communication for hours.

Parallels are strictly speaking merely defensive lines to repel sorties; therefore, the chief object to be attended to in forming parallels and approaches, is a convenient arrangement of the troops for engaging, and a ready communication for support between every part of the trenches. The parapet is little more than a screen, nor is it possible to render it shot-proof for a foot or two below its crest; neither is it materially important, provided it screens from view every thing passing behind it, for no besieged place can afford to risk the loss of its ammunition, by maintaining much fire on any part of the approaches, which they cannot positively ascertain to be thickly occupied with men. Good banquettes in all the parallels are essentially necessary, and the second parallel, and every part of the work in front of it, require to be reveted with gabions, fascines, or sand-bags, as otherwise the men firing from the banquettes, are not sufficiently covered from the effects of grape shot.

It is, however, very desirable in all interior revetements of parallels, or places of arms, more than 150 yards distant from a place, to make the revetements in steps, so as to offer a ready means for the guard of the trenches to advance on a good front, and meet or pursue a sortie with their bayonets. When the approaches are very near, to obtain good cover from musketry and vertical fire is more essential than facility of egress.

FLYING SAP.

The provision of entrenching tools not admitting of a pick and shovel being issued to each workmen, they were in forming the flying sap delivered alternately with the gabions, and the men were made to work in pairs, two men filling two gabions: though this is contrary to the usual method, and originated in the scarcity of tools, it was afterwards persevered in from choice, as it was found preferable to each man filling a single gabion, those of twenty inches diameter not affording space for a man to work behind them. Previously to the arrival of the working party, the white line was stretched on the ground, marking the direction of the parallel and approaches, and each workman as he formed up placed his gabion two feet in front of it: the soldiers performed this work readily enough, even under a heavy fire, and there was no difficulty in executing in the night, any quantity of flying sap, which the party was numerous enough to line.

It may be as well to mention that in marching to the work, every sixth man carried the arms of the other five, and afterwards supplied the place of those killed or wounded.

At St. Sebastian, the sappers finding the fire of the place very slack, contrived to push on the approaches more rapidly than usual, by a mixed nature of flying and full sap: that is, the sappers advancing on their hands and knees, placed one empty gabion after another, till a small row was formed; then two or three sappers placed themselves behind the empty gabions at good distances from each other, and sitting at their work, each formed a small hole for himself, and with the earth from the excavation filled the gabion in his front; after this, the sappers severally worked towards each other, till the whole row of gabions was filled, and a trench formed along their rear. This mode of proceeding would probably much facilitate the reduction of a small detached work, the artillery and musketry of which was well kept under, but would not be generally found practicable under a smart fire.

DISBURSEMENTS.

The officers acting as engineers, and those in charge of the sappers from the line, were paid 10*s*. per day.

The soldiers acting as sappers and miners, and those working as artificers, were paid for their daily labour according to the rates laid down in the King's regulations for military working parties. Galleries of mines were occasionally paid for by measurement, at a price varying according to the difficulties of the soil, or the danger of the undertaking, fixed at the moment by the commanding engineer; but the troops generally received no pay or additional allowances whatever at these sieges.

JOURNALS

OF THE

ATTACK OF THE CASTLE OF SCYLLA IN CALABRIA

AND

BOMBARDMENT OF FLUSHING.

The remainder of this volume was occupied with a detailed Account of various Field-Works and Defensive Lines thrown up by the British during the last war; but some doubts having suggested themselves of the propriety of an individual giving general circulation to such details ten sheets have been withdrawn. As a substitute, and with the view of giving the volume sufficient bulk for binding, the following Journals of the Attacks of Flushing and of the Castle of Scylla in Calabria have been inserted.

DEC. 30, 1826.

CHAPTER VI.

ATTACK OF THE CASTLE OF SCYLLA IN CALABRIA.

PRELIMINARY MOVEMENTS.

Plate XIII.

On the coalition of Russia and Austria in 1805, to restrain the aggressions of Napoleon Buonaparte, England fitted out an armament at Malta of 8,000 men, destined to act in concert with a Russian force of 14,000 men from Corfu, under the chief command of the Russian General Lascy, in dislodging a French corps, which, since the rupture of the peace of Amiens, had forcibly occupied the Neapolitan states, so as to enable the King of Naples to join his arms with those of the confederated powers.

Napoleon, however, aware of the destination of this force, immediately on commencing hostilities against Austria, obliged Ferdinand to conclude a treaty, by which the neutrality of the kingdom of Naples was pledged during the contest, in return for the immediate removal of the

French troops.* Soon after this great political change, the Russian squadron from Corfu appeared off Malta, (on the 1st November,) and being joined by the British division, the united fleets made sail for Naples: their arrival, however, was retarded by calms and contrary winds till the 20th, a few days previously to which, intelligence had been received of the masterly manœuvres of the French on the Danube, and of the consequent capitulation of the Austrian army at Ulm. Notwithstanding these threatening omens, after twenty-four hours debate, the allied forces (14,000 Russians and 8,000 British) disembarked, and the neutrality of the kingdom of Naples was violated, without any intelligible object, all the French garrisons having been withdrawn in conformity to the treaty, and the theatre of war being at least 400 miles distant.

Whilst the confederated troops were still on the march to the frontiers to cover and protect the formation of an auxiliary Neapolitan force, the fall of Vienna became known, and before they had occupied their cantonments on that line, the fatal battle of Austerlitz, with its attendant armistice, was announced; so that in fifteen days from commencing the war, King

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* Ratified at Portici, 8th October, 1805.

Ferdinand found himself compromised and left singly, with the assistance of a handful of men, to brave the vengeance of a powerful and justly irritated foe.

The Neapolitan army, being principally composed of newly raised levies, scarcely organized, and totally unequal to face the threatening storm, the British generals felt it due to a confiding ally to undertake the defence of his kingdom, with the limited means at their command; and when the natural strength of the country is considered, it will not appear to have been an attempt altogether hopeless of success.

The frontier of the kingdom of Naples offers many advantages for defensive warfare, being only eighty miles across from the Tuscan to the Adriatic sea, and the ramifications of the Appenine Mountains, spreading over that limited space, confine the military communications to two or three principal roads. The right is particularly susceptible of a protracted defence, from the hilly nature of the country, its distance from the capital, and the difficulty of the roads. On the left, the country is more accessible, but which is in some degree compensated by the support of the fortress of Gaeta, and the formidable barrier the rapid Volturno and Garigliano present to an invader;—rivers of the most difficult nature to cross in winter, and celebrated as such in all periods of military history; nor should the deadly Pontine marshes, forbidding the near assembly or long residence of an hostile army in its front, be altogether overlooked as an accessary of strength to this portion of the frontier.

On the 2d January, 1806, it was proposed in a Council of War, that the allied forces should endeavour to maintain themselves on the frontier till the arrival of reinforcements, which might enable them permanently to protect the kingdom. This proposition being combated by the Russian officers as too hazardous to be attempted, and they recommending the immediate re-embarkation of the army, Sir John Stuart, second in command of the British, rose and replied: "As soldiers, let us not of our own act abandon this fine country, and a people whom we have committed in hostilities against a foe too powerful for them alone to resist; if the frontier line be deemed too advanced to be prudently disputed, let us occupy it only till the French shall be prepared to approach in superior numbers; and then let us retire into the strong country of Calabria, where, covering some seaport, we may securely await the decision of our respective governments."

As this manly opinion could not be immediately controverted by any military reasoning, the council was adjourned to the following day for a final decision. In the mean while, Sapri, in the gulf of Policastro, being supposed the most eligible port for the communications of the army, should such a system of operations be adopted, officers of engineers were despatched to examine it and trace works for its defence; and transports were ordered round with the necessary implements and stores to commence the work.

These preparations, however, were attended with no results: for at the next meeting of the council, General Lascy resumed his argument against the measure in agitation; and, after some discussion, finding the British officers not to be turned from their opinions, produced an order from his Sovereign for the Russian troops to cease to oppose the French and retire to Corfu, and concluded by stating his intention of immediately marching on Pozzuoli to re-embark.

Such a disengenuous proceeding gave cause to fear a breach of good faith; perhaps the next moment might announce the alliance of Russia with France and acts of hostility follow: no time was therefore to be lost in withdrawing. The British troops marched on Gaeta to meet their ships, but the governor not having been apprised by his court of their movements, closed his gates and denied them admittance into the fortress. This unlooked-for conduct had an unpleasant appearance, and no resource was left but retiring past the capital to Castelmare in the bay of Naples. The inhabitants murmured loudly when they knew of this retrograde movement, and saw themselves abandoned by their allies without an effort, to the dominion of the French. Even the Lazaroni, who, as the poorest of mankind, and having nothing to lose, could suffer from no change of masters, were outrageous, and it was doubtful if they would not become active enemies. In consequence, roads the most distant from Naples were selected for the march of the columns; the detour increased the duration of the retreat; heavy rain fell incessantly for several days, accompanied by a gale of wind, which retarded the shipment of the stores, and Sir James Craig felt happy when, on the 19th of January, he saw his whole army safely embarked and under weigh for Messina, where the transports anchored two days afterwards.

Notwithstanding that Buonaparte on receiving intelligence of the violation of the treaty of Portici had fulminated an edict declaring Ferdinand to have forfeited his kingdom, still, under the idea of giving the unfortunate monarch a chance of negociating, the troops were not landed in Sicily, nor any communication allowed with the shore. The French commanders for a short time affected to listen to the proposals made, but the moment a sufficient army was collected, it crossed the frontier. The King and Queen had fled to Palermo on the departure of the allies: the hereditary Prince, who remained at the head of the government, unable to open a negociation, quitted the capital on their approach: neither fort St. Elmo nor the castle dell' Ovo, posts capable of many days defence, offered any resistance, and the invaders, on the 15th of February, entered Naples unopposed; on which the Prince retired with the regular army into Calabria; a division of French under General Reynier followed, and, on the 9th of March, at Campo-Tenese completely routed and dispersed the royal forces. Buonaparte then, without any reserve, followed up his anathema against Ferdinand by naming his brother Joseph to succeed to the vacant throne; and such was the reputation of his arms, and belief in their invincibility, that a few thousand troops carried into effect his sentence of deposition against a beloved Sovereign, and accomplished the subjugation of the most defensible country in Europe, without being opposed by an hostile shot,—Gaeta, an isolated point, alone refusing submission to his mandate.

The British troops, on intelligence of the failure of the negociation, were ordered to disembark at Messina on the 18th of February: so that in the short space of five weeks, without having seen an enemy, this corps, from the proud situation of protecting the northern frontier of Naples, found itself reduced to the occupation of a single town in Sicily, without having organised any measures of defence for the country, whilst a French force in rapid march to the extremity of Calabria threatened to drive it out of the island.

This threat was too likely to be realized. From the indecisive policy which governed the movements of the army on quitting Naples, none of the military resources of the kingdom were destroyed. The batteries along the coast, guns, ammunition, stores of every description, even vessels for the conveyance of troops, remained untouched: nay, further, the castles of Scylla and Reggio, which command the navigation of the straits of Messina, were left entire, and fell uninjured, without any attempt at resistance, into the hands of the invaders. But a circumstance of far more importance was, that character and confidence were forfeited in the opinion of the inhabitants. Every one expected the same scenes would be repeated, and imagined that the army only remained till the French were prepared to make a descent, when it would embark for Malta, and the transports lying in Messina harbour were pointed out as convincing proof of such intention. This belief was generally prevalent in the upper classes of society, who, friendly to Ferdinand from inclination, would not therefore, from policy, openly aid in his defence. The examples of hundreds of their fellow subjects, fugitives from Naples for having done so, and reduced from affluence to penury, without a movement in their behalf, too forcibly pointed out the probable bitter fruit of active loyalty not to make them shrink from its performance. Their distrust even led them to repress exertion in their dependants, whose good-will, unfettered by fears for the consequences, would readily have formed them into faithful auxiliary legions; whereas, discouraged by their superiors, they remained passive expectants of the event. Even the monastic clergy, uniting, under Ferdinand, great wealth with unbounded influence, and therefore sincerely interested in opposing any change, limited their assistance to good wishes; evidently showing that they participated in the general feeling to our prejudice and feared to irritate an enemy, whom they did not expect to see successfully or even seriously opposed. Thus Sicily, naturally so defensible, with a population of one million and a half of souls, being paralysed in her own exertions from indecision and distrust, reposed her destinies on a division of British troops.

Under these discouraging prospects Major General Sir John Stuart succeeded to the command of the forces in Sicily in the month of April. The spirit of enterprize which ever animated that officer, and the urgency of affairs, induced him shortly afterwards to meditate an expedition against the French, (who, become presumptuous from our inactivity, were injudiciously spread over the opposite country,) which should cripple their army, restore character to the British, confidence to her allies, and render far distant a descent on Sicily.

Sir John Stuart reasoned thus, " I have under my command between 7 and 8,000 good troops, concentrated round Messina. General Reynier has rather a greater number of French troops in Calabria, but very differently situated. 3000 of his men are at the most southernly extremity of the peninsula, overlooking Messina, and 4000 in Upper Calabria, forming two distinct bodies; whilst the remainder of his force is so dispersed as not to be able immediately to join either body. If I embark 5000 men I can make a descent in the bay of St. Eufemia, between the two principal corps, and considerably nearer to the one than to the other. Should the enemy from Upper Calabria alone oppose me, I shall have it my power to engage 4000 men with 5000, when I shall surely beat them. If they retire, I shall destroy some of their depôts and re-embark; but if I gain a complete victory, I can march down to Reggio, make prisoners the corps opposite Sicily, blow up the castle of Scylla, and destroy every instrument of invasion along the coast."

This being the plan of the enterprize, it will appear that success depended in great measure on the secrecy with which it should be carried into effect; but it was necessary to communicate it to the court of Palermo, and there is reason to suppose from the enemy's movements, that, either accidentally or intentionally, it became known to them; and the knowledge had nearly proved fatal to the invading army, though it ultimately served to render its triumphs more splendid.

BATTLE OF MAIDA.

On the 28th June, all the necessary preliminaries having been arranged, the troops embarked out of view of the coast of Calabria, at Melazzo, and, on the 1st July, aided by a squadron under Sir Sidney Smith, effected their debarkation, with slight opposition, on the northern shore of the bay of St. Eufemia. The

2d and 3d were spent in landing supplies and making preparation to advance; and, as a precautionary measure, a retrenchment was thrown up on the beach to cover the re-embarkation of the army, if effected in presence of the enemy. In the evening of the latter day, the advanced pickets were in contact with those of the French, and at night-fall, the hills skirting the plain on which the invaders reposed, were covered with the fires of the French bivouacs. This was considered to be the corps from Upper Calabria alone; whereas that from the South had joined, and General Reynier had assembled together 7000 infantry and 300 or 400 cavalry, and with that force had taken a strong position on the commanding ground above the Amato, covering the only roads by which the invaders could penetrate into the country.

Unconscious of the great superiority of the enemy, the army marched at day-light on the 4th July in columns of brigades to the attack of their position. The right in advance, composed of a battalion of light infantry and Royal Corsican Rangers, led by Lieutenant Colonel Kempt; the left closing the rear, consisting of the 58th and Watteville's regiment, commanded by Colonel Oswald; the two centre brigades, under Brigadier Generals Ackland and the Honourable G. L. Cole, composed, the first of the 78th and 81st regiments, and the latter of a battalion of Grenadiers and the 27th regiment: forming altogether, a body of 4,800 infantry, supported by six pieces of field-artillery and eight mountain guns under Lieutenant Colonel Lemoine, but without a single squadron of cavalry.

The distance to march was about eight miles over a low country, at the commencement covered with underwood, but gradually becoming more open, and ending in a spacious plain; so that General Reynier from the height on which he was posted could observe the composition of the army and ascertain its numbers. The character of British soldiers did not at that period stand so high as recent victories have raised it, and the French commander felt no apprehension, but that the invaders should escape chastisement by a speedy retrograde movement. To prevent this, he quitted his strong position on the hills, crossed the river and advanced into the plain. Then the superior force of his opponent first became known to Sir John Stuart, but it caused no hesitation; the columns were instantly ordered to deploy, and, covered by the fire of their light troops, the two armies formed into line at the same moment opposite each other, with all the coolness and precision of a review.

The action began on the right, about nine o'clock, Lieutenant Colonel Kempt's Brigade commencing its fire at the same moment with the enemy's left, composed also of a distinguished light corps: after a few rounds each advanced to the charge, but when nearly in contact the French turned, broke, and fled. The parties, however, were too close for many of the vanquished to escape; numbers were bayoneted, and others, to avoid a similar fate, threw themselves on the ground, and being trampled over by the victorious line surrendered prisoners, and many whom speed saved from the bayonets of the infantry fell under the fire of the artillery. Brigadier General Ackland, on witnessing Colonel Kempt's successful charge, instantly pushed forward on the demi-brigade in his front, which also gave way, and being driven off the field, and closely followed across the shallow stream of the Amato, so many fell that the whole left of the enemy was nearly annihilated.

The pursuit of the routed wing continued above a mile, and carried the right too far in advance to lend support to the remainder of the army, which General Reynier perceiving, and being able, even after his severe loss, to show a greater front than the British, he endeavoured to retrieve the fortune of the day by outflanking their left: for this purpose he made his cavalry, after several demonstrations of charging in front the brigades of Generals Cole and Oswald, rapidly wheel round their left flank whilst his infantry seriously menaced their front.

To parry this effort against their flank, the British line gradually inclined backwards on its left, so as to form a considerable angle to its original position, and then firmly awaited the attack of the infantry and the manœuvres of the cavalry. At this interesting crisis, the French line approached sufficiently near to open its fire, and the day was about to be decided by a general charge of infantry and cavalry, when the 20th regiment, which was on its march from the landing place, (having been disembarked during the action,) was most judiciously brought up on the extreme left by Lieutenant Colonel Ross to oppose the cavalry; and under protection of some rough ground and broken trees, opened so destructive a fire that they went to the right about. The British line immediately advanced, on which, after a sharp fire of musketry, the whole French army fell into the greatest confusion, and covered by their artillery and cavalry retired as quickly as the troops could move, leaving 700 dead on the field, many wounded, and a general officer with above 1000 men prisoners to the victors, who had only to lament the loss of Captain Maclean and 44 men killed, and 11 officers and 271 men wounded.

After this decisive victory the British remained for the night on the ground to receive supplies from the fleet; but on the 6th were put in movement, the greater part in advance, to endeavour to come up with the rear of the beaten army, and one brigade under Colonel Oswald on Monteleone, the principal depôt of the French in Calabria.

This brigade on its march turned the sea defences of Pizzo, Tropea, &c., which places immediately surrendered to the naval commanders, who destroyed the works and brought off the guns and stores.

At Monteleone 600 men and officers were made prisoners, and the baggage, hospital stores and military chest of the French Calabrian army were captured or plundered by the Calabrese.

ATTACK OF THE CASTLE OF SCYLLA.

7th July.

It being ascertained by Sir John Stuart when near Maida that the panic amongst the beaten army had carried them to Cattanzaro with scarcely an interval of rest, he deemed further pursuit useless and countermarched on Monte

Leone. On reaching that city he directed Colonel Oswald to move to the extremity of the peninsula and gain possession of the fortified posts. With this view there were attached to Colonel Oswald's force two 12-pounders and one 5½-inch howitzer under Captain Pym and Lieutentant Dynely, with a brigade of mountain guns under Lieutenant Deacon; and two officers of Engineers, Captain Jones and Lieutenant Lewis.

On the 9th Colonel Oswald halted at Melita, on the 10th bivouacked, and on the 11th, in the middle of the day, entered Bagnara and remained there till dusk; when marching along the sea cost to the Fiumare about 1,500 yards from Scylla, the troops ascended it unperceived, and before morning had formed their bivouacs in front of the castle.

It was now perceived that Sir Sydney Smith in the Pompée had preceded the march of the troops, and had landed three or four guns, which soon after day-light opened on the castle from a point extremely distant to the eastward.

RECONNOISSANCE.

12th July.

The castle of Scylla was found to stand on a rock 150 feet in height, two-thirds of the circumference of which was washed by the sea, and the only approach was along a narrow ridge connecting it with the town. One short front of the unusual height of forty-three feet, and of even more than a proportionate thickness of masonry, occupied this ridge, and sheltered the interior from the direct fire of guns; whilst its spacious and airy casemates covered the garrison from the effects of shells.

The whole of the sappers and miners, and reserve artillery of the French Calabrian army, amounting to nearly 400 men, were in the castle, which was amply supplied with provisions and ammunition, and commanded by Lieutenant Colonel Michel of the engineers, an officer of much service and character.

Under these circumstances, it was evident that the only certain means of reducing the castle was by breaching the land-front, and General Oswald gave his sanction for three 18-pounders being sent for to Messina for that purpose.

OPERATIONS.

A number of tools being collected from the inhabitants, the light guns were, in the course of the morning, placed in a protected situation on the north of the castle; and after a few rounds had been fired from them, terms of surrender were proposed to the commandant, to which he merely replied that he had already rejected far more favourable offers from the admiral.

12th July.

Waiting the arrival of the 18-pounders from Messina, a battery, No. 1, was thrown up behind a garden wall on the west of the main road for the field 12-pounders and howitzers to fire in at the embrazures of the casemates used as store and lodging rooms by the garrison on the west side of the castle at the distance of 600 yards, and further to enfilade the front intended to be breached. The battery, besides being concealed from view, was placed out of the direction of the fire of the embrazures of the casemates.

13th July.

Working parties were employed throughout the day in making the road up the banks of the Fiumare practicable for heavy guns and in raising battery No. 1, which in in the evening was nearly finished when the commanding officer of artillery Lieutenant Colonel Lemoine joined, and thinking its fire would be more effectual if nearer, and that merely a screen would be sufficient for a parapet, it was decided to abandon No. 1.

During the night a working party threw up a musket-proof parapet of sand-bags about 120 yards nearer the place.

14th July.

At daylight the garrison directed on the workmen a good deal of distant musketry, and soon afterwards were observed to be cutting away the cheeks of the embrazures of their casemates to give them more opening.

The field-guns were run into the battery about 7 A. M., and opened their fire.

In a few minutes afterwards the castle replied with two guns from the casemates, instantly dismounted one of the howitzers, and killed and wounded several of the gunners, on which the battery was abandoned.

Three 18-pounders and two 10-inch mortars arrived from Messina; the former were safely disembarked in the bay to the westward of the castle; but the mortars swamped the boat and fell into the surf, from which they were not recovered till after the surrender of the castle.

15th July.

This morning early, Captain Lefebure, the commanding engineer with the army, who had been employed to examine and report on the country round Monte Leone, arrived, and assuming the direction of the attack, immediately arranged that four 24-pounders should be brought from Messina to breach the front of the castle, and that the 18-pounders and field-guns should be employed as auxiliaries only on its left flank. In consequence, at night battery No. 2 was strengthened to cover the 18-pounders.*

16th July.

A good shot-proof battery, No. 3, was thrown up this night for the field-howitzers.

17th July.

The above batteries were completed and armed, and the field-6-pounders were placed in positions out of view of the artillery of the castle, to fire in at the embrazures of the casemates. (42)

18th July.

The above batteries fired thoughout the day with such effect that the garrison only occasionally showed a head above the parapet.

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* The officers of Engineers now present were Captain Charles Lefebure, commanding; Captain John Thomas Jones; Lieutenants George Macleod, George Hoste, George Lewis, and William Boothby.

Those of the artillery were Lieutenant Colonel Lemoine commanding; Captains Pym, D. Campbell and Hickman; Lieutenants Thomas Cubitt, Dynely, H. Gordon, Dunn and Bayley.

Working parties were kept constantly employed to fill sand-bags, and collect casks and materials under the nearest cover to the proposed breaching batteries.

19th July.

The 24-pounders being landed, a party of two hundred men, under a field officer, was set to work at nine P. M. to throw up batteries 4 and 5 for their reception at one hundred and ninety yards from the face to be breached. At one A.M. on the 20th, a party of similar strength relieved them, and by means of the quantity of materials prepared near the spot, excellent cover was obtained before daylight.

20th July.

The working party was relieved at eight A. M. by a lesser party of fifty men; and at eleven A. M. the parapet of the battery was complete, (although made twenty feet thick at top,) the platforms laid, a magazine formed for the ammunition, and every thing prepared for the reception of the guns.

At night the artillery armed batteries 4 and 5.

21st July.

Early this morning the breaching batteries opened under the command of Captain Meadows, and by evening the face of the wall appeared a good deal damaged.

The commanding engineer Captain Lefebure, attended by Lieutenant Hoste, proceeded to Reggio, to arrange for the reduction of its castle; but being affected by the mal-aria on the road, was obliged to be conveyed to Messina, which he reached in almost a hopeless state.

22*d July.*

The breaching batteries resumed their fire this morning, and in the afternoon, having cut three or four feet into the escarp wall of the left bastion of the castle, a flag of truce was sent in by Colonel Oswald, offering permission to the garrison to return to France on their immediate submission.

23*d July.*

A capitulation having been signed on the terms offered, hostilities ceased, and the garrison embarked three hundred and fifty effective men, having had three officers and thirty-five men killed or wounded, and leaving many sick behind them.

During the operations against Scylla, Brigadier General Broderick, who had been left in command at Messina, crossed the straits with part of his garrison, and raising batteries before the castle of Reggio, obliged two hundred men who had thrown themselves into it to capitulate; and shortly afterwards Cotrone being summoned by a naval and military force, under Captain Hoste and Colonel Macleod, its garrison of six hundred men surrendered prisoners, and a great quantity (one hundred and fifty pieces) of artillery and stores, were brought off by the captors.

Sir Sidney Smith sailed from Scylla on the 13th, to the assistance of Gaeta, then much pressed by its besiegers; but neither his personal gallantry nor that of the seamen could counteract the errors of the defence, and he had the mortification to witness its fall on the 18th July, two days after his arrival.*

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* The Prince of Hesse Philipstal, the governor, a brave grenadier, totally unversed in the science of defence, threw away his ammunition and ruined his artillery by a too early and ineffectual fire, himself standing for hours together on the batteries performing the duty of a bombardier, and estimating the merit of his defence more by the number of rounds fired than by their effect.

The besiegers, by a singular contrast, carried forward their approaches with rare coolness and intrepidity, never firing a shot till on the glacis: they then opened vigourously from a numerous artillery, to which the garrison being unable to reply, the last and most dangerous part of the attack was executed with little delay or difficulty; and the French, by superiority in the military art over the defenders, obtained possession in an attack of a few weeks of a fortress honoured with the name of Little Gibraltar.

In revenge, however, Sir Sidney forced the French garrison at Amantea, and other places to surrender prisoners, and ranging with his squadron from Naples to Cape Diamante, attacked every military post along the coast; (43) whilst a British force established in the island of Capri, previously captured by him, overlooked the capital and kept the new sovereign and his court in perpetual alarms.

27th July.

Sir John Stuart came to Scylla to decide the fate of the castle, whether it should be blown up or retained.

The general feeling most strongly urged its destruction, on the presumption that any force left to garrison it must be made prisoners whenever successfully attacked; and such would in all probability have been its sentence, had not the engineers previously ascertained that a certain space, A. in rear of the castle, must under all circumstances be sheltered from the view of a besieger, and that no fire of guns could be brought on boats approaching that space, at a less distance than 700 or 800 yards; and also the practicability of making a communication or stair-case within the same space, A. from the terre-plein of the castle to the water's edge, which could by no possibility be reached or interrupted by an enemy.

A plan explanatory of this scheme for withdrawing the garrison having been prepared and submitted for consideration, Sir John Stuart, after a sufficient examination of the spot to verify its accuracy, decided to maintain Scylla Castle as an outpost to Sicily, and ordered its defences to be immediately repaired and augmented to the utmost.

The dotted lines A B an d A C show the ranges of seven and eight hundred yards, from which points the rear of the castle rock could be most closely fired on.

28*th July*.

This morning the trace of the communication down the rock was definitely planned, partly by means of excavations in the rock, partly by steps cut along the ledges of the rock and partly by arched passages.

Additional platforms for ordnance with secure parapets, and various musketry lines and traverses on the flanks of the castle, for strengthening its front generally, were also planned and immediately commenced.

These labours proceeded with the utmost vigour, till a change of commanders caused all the British troops to be withdrawn from Calabria, except the 61st regiment, under Colonel Saunders, left as a garrison in Scylla.

Lieutenant Macleod was then selected to remain as the officer of engineers in the castle, with directions to complete the back communication and the additional defences with such working parties as the garrison could furnish.

A principal motive with Sir John Stuart for retaining the castle was the ready means it offered for supporting offensive measures in Calabria; but beyond this its situation rendered it of considerable importance in a maritime point of view, as the fire of an enemy's artillery from its ramparts gave reality to the ancient fable, and rendered Scylla the dread of the most skilful mariners.

The rock on which the castle stands forms the north eastern point of the entrance of the Straits of Messina, through which the current runs with incredible rapidity, and meeting with a check to its free passage along the Sicilian shore, from the opposition of Cape Pelorus, a low projecting sandy point, it diverges off, with an accelerated and almost irresistible force, towards the Calabrian coast. Such strong eddies are formed by this re-action, that vessels navigating in light winds past Cape Pelorus become unmanageable, sheering about in every direction, whilst the current forcibly urges them on the rocks which surround Scylla. Under these circumstances, the only resource to prevent shipwreck is to anchor under its guns; and consequently, when the castle is in the hands of an enemy, the shelter attained is little less fatal than the danger avoided.*

To give full security to fleets passing through the straits, and to convert a dangerous opponent into a useful auxiliary, by forming of the castle a bar to the assembly of the enemy's small vessels within the straits, from whence alone Sicily can be invaded by a flotilla, were deemed sufficient reasons for retaining Scylla, even after the intention of opposing the return of the French was relinquished. The repairs of the castle were in consequence completed, and a British garrison being continued in it, the flag of our ally waved proudly over its battlements till February, 1808. Scylla was then powerfully attacked by the French; and having been defended till reduced to a heap of ruins, the garrison was withdrawn without the loss of a man or leaving a trophy to the enemy. Thus, independently of the moral effects of humbling a presumptuous enemy, raising the depressed reputation of the Mediterranean army, and converting the distrusting population of Sicily into grateful admirers, the positive results of Sir John Stuart's expedition were, the destruction of all the military and naval resources of Calabria, and the occupation of a post which for eighteen months kept open the navigation of the Straits of Messina, and deferred, for that period, all preparation for a descent on Sicily. (44)

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* The principal hospital ship, with most of the medicines and stores for the army, was under these circumstances obliged to anchor, and was taken possession of by the garrison of Scylla, the day before General Oswald formed the investment.

The Straits at the narrowest point are not two miles in width.

CHAPTER VII.

BOMBARDMENT OF FLUSHING, AUGUST, 1809.

PRELIMINARY OBSERVATIONS, ARRANGEMENTS AND MOVEMENTS.

FROM the commencement of Napoleon Buonaparte's rule over France, it was a favourite object of his ambition and policy to create a formidable maritime force in the Scheldt; and by means of unremitting exertion and an unlimited expenditure, he had, in 1809, succeeded in perfecting extensive dockyards and arsenals at Antwerp, Terneuse, and Flushing.

From these establishments he had already launched and fitted out a powerful squadron of line of battle ships and frigates, besides a numerous flotilla; which, fully manned and well equipped, floated on the Scheldt in immediate readiness for any enterprize, at the distance of only a few hours' sail from the mouth of the Thames. Many other ships of equal or superior size were in the progress of construction, both at Antwerp and Flushing; and the yards and store-houses were loaded with timber, cordage, masts and every requisite for increasing his naval means to a degree to excite the jealousy, if not the apprehensions, of England.

These valuable fleets and establishments Napoleon had always protected with jealous care, by a strong and efficient land force, till his invasion of Austria in 1809; when, believing the military energies of England paralysed for a season, by her recent disasters in the north of Spain, he ventured to withdraw his legions and trust his marine to its own force, and the protection it could draw from numerous heavy sea batteries and various forts on the banks of the Scheldt, in addition to the fortifications of Flushing and Antwerp.

These sea batteries, nevertheless, were all defenceless towards the land, and the forts, except Bathz, all too distant from any line of military operations to affect the movements of a powerful army. The same may also be said of Flushing,—that it did not necessarily interpose between an invader and Antwerp, and might be reduced at any moment most convenient to his general views; so that in fact, the only impediment to an immediate march on that city from South Beveland not to be avoided was Fort Bathz, which demanded an energetic and perhaps costly assault, or a regular operation of three or four days.

With respect to Antwerp, the fortifications on the right of the Scheldt consisted of merely an irregular and ill-covered line of bastioned fronts, almost destitute of outworks, and in a most neglected condition; but which, having lofty brick revetements or broad wet ditches, was secure from a coup-de-main. The garrison, however, being composed almost entirely of the Burgher Guard, the government workmen, or drafts from the crews of the fleets, and being ill provided with every nature of supply, could not be expected to defend such works against a vigorous attack more than ten or twelve days.

It is true that a respectable pentagonal citadel, on the right of the town, closely bordered the dock-yard and arsenal, and would prevent a hostile force from occupying them openly for a much longer period; but it was perfectly easy for a besieger, on the fall of the town, to destroy, in the obscurity of night, the slips, the buildings, and all they contained.

Eighteen or twenty days might therefore be reasonably calculated, as a period within which a powerful and enterprizing invader might annihilate every naval establishment on the banks of the Scheldt from Flushing to Ghent. The regular forces which could, during the same period, be assembled to oppose him, did not exceed 18,000. Of that number 10,000 were in Holland, 3,000 in Flanders, and the remainder in depôt in various garrison towns. Independent of this force, there were 4,000 men shut up in the island of Walcheren, to cover the French town of Flushing; but the other islands of Zealand, being Dutch, were utterly destitute of troops, and in Bergen-op-zoom there were only two or three companies of invalids.

The national guards of Brabant and Flanders might be regimented at the moment of invasion to the number of several thousands; but they had been too recently decreed to be Frenchmen to have any national feeling to induce them to expose themselves with alacrity or cheerfulness: indeed, in some of the departments it was very doubtful if the authorities even possessed sufficient influence to make them quit their homes.

This state of affairs presented too favourable an opportunity to annihilate at one blow the labour of years and the cost of millions to be neglected by the English ministry; and as soon as Napoleon was completely embarked in operations across the Rhine, they fitted out an armament in the eastern ports of England, the object of which was "the capture or destruction of the enemy's ships either building at Antwerp or Flushing, or afloat on the Scheldt; the destruction of the arsenals and dock-yards at

Antwerp, Terneuse, and Flushing; the reduction of the island of Walcheren, and the rendering, if possible, the Scheldt, no longer navigable for ships of war."

The force embarked consisted of

3,015 cavalry
1 troop horse-artillery
5 brigades of field-artillery
33,096 infantry

accompanied by two distinct equipments of siege ordnance and stores, with attendant officers and men. Brigadier General Macleod, however, having the general command of the artillery, and Colonel Fyers that of the engineers. (45)

A fleet of men-of-war was assembled to cooperate in attaining the above objects, consisting of

35 sail-of-the-line.
2 ships of 50 guns.
3 do. of 44 do.
18 frigates.
33 sloops.
5 bomb vessels.
23 gun and mortar brigs.
17 hired cutters.
14 revenue vessels.
5 tenders.
82 gun boats.

together with the craft employed at his majesty's dock-yards.

Lieutenant General the Earl of Chatham was named to command the land forces, and Rear Admiral Sir R. Strachan the naval forces.

Plate XIV. Fig. 1.

The arrangements for the proposed operation were, for the left wing of the army, about 13,000 men, under Lieutenant General Sir Eyre Coote, to land on Domburgh beach in the island of Walcheren, and lay siege to Flushing.

The distance across the Scheldt between Flushing and the island of Cadsand being little more than two miles, and powerful batteries on both sides crossing their fire over most part of the channel, a division of 4,891 men, under Lieutenant General the Marquis of Huntly, was destined to land near the Wulpen signal station on the island of Cadsand, and destroy the batteries of Breskens on its coast commanding the Weilinge channel; which measure would open a free passage for the immediate advance of the fleet up the river, and prevent any succours being thrown into Flushing to prolong its defence.

A division of 7,261 men, under Lieutenant General Sir John Hope, to obtain possession of some points of the south side of the island of

Schowen, and the whole of the island of South Beveland, so as to prevent the batteries on the southern coasts of those islands annoying the fleet and transports, in their progress up the eastern and western Scheldt.

Two other divisions of troops were embarked, one at Harwich, consisting of 5,012 infantry under Lieutenant General Grosvenor, to be available on any point; and the second, consisting of 1,000 cavalry and 3,000 infantry, under the Earl of Rosslyn, to remain embarked till operations on the continent.

It was hoped that, under these arrangements, the portion of the armament intended to reduce Antwerp might be collected together in the western Scheldt, within ten miles of the city, in a week from quitting England.

The ulterior operations from that point were necessarily to be in some measure governed by the success of the first measures, and the state of preparation and defence in which the country should be found (46).

MARITIME MOVEMENTS.

The two commanders in chief in the Venerable line of battle ship, and Sir John Hope's division in transports, sailed from the Downs on the 28th July, and anchored in East Capelle roads, about three leagues from Domburgh

Church, the same evening; but during the night a heavy gale of wind came on from the westward which obliged them to run into the Room-Pot, off the northern end of the island of Walcheren for shelter; which, led by the Salsette, they accomplished at 2 P.M. on the 29th. The same cause obliged the transports, with the left wing under Sir Eyre Coote, to run from the Stone Deep, their original point of rendezvous, for the same anchorage, which, led by the Venerable, they also safely attained at 9 A.M. on the 30th.

In the course of the day the transports with the siege equipments joined at the same point; and on the 31st the divisions under Lord Rosslyn and Lieutenant General Grosvenor also anchored in the Room-Pot.

The transports with the division of the Marquis of Huntly sailed from the Downs on the 28th July, and reached the opposite coast in the evening; but in consequence of strong baffling winds and unsettled weather, they were unable to attain an anchorage in the Weilinge passage, favourable for disembarking the troops, till the 31st. In the intervening period, however, from their first being seen from the shore, considerable reinforcements had been sent into the island; and, on preparing to land, it was found that the boats of the squadron and transports were capable of debarking only 600 men at one time. Therefore, as the weather still remained very unsettled, and the return of the boats might be long delayed, it was not deemed prudent to risk throwing so small a body of men on shore as 600, without some more immediate and certain support; and in consequence the enterprise was abandoned.

When this failure became known to Lord Chatham on the 3d August, and no hope could be entertained of pushing any number of the transports up the western Scheldt till after the fall of Flushing, the division of the Marquis of Huntly was also ordered into the Room-Pot, which they reached on the 6th August; and the whole force of the army afloat then centered in the eastern Scheldt.

OPERATIONS IN THE ISLAND OF WALCHEREN.

30th July.

The shores of the island of Schowen being found to be too distant from those of Walcheren and South Beveland, to annoy the anchorage off those islands or the entrance into the eastern Scheldt, the original intention of taking possession of Schowen was relinquished, and the first object after the fleet anchored in the Room-Pot was to disembark the left wing of the army and reduce the island of Walcheren. As soon as the tide served on the afternoon of the 30th, the boats of the division of Sir John Hope being united with those of the left wing, the troops were put on shore on the Bree Sand in good style, opposed merely by a few shot fired from the battery Den Haak. That work was abandoned by the French on the first forward movement of the invaders, and the troops quietly bivouacked for the night on the adjacent sand-hills, ten miles north of Flushing.

The only loss this day was at Veer, which place Colonel Pack having too closely approached with the right wing of the 71st regiment, the garrison opened a fire of musketry on his party, which killed and wounded thirty-five of their number.

Monday, July 31st.

Early in the day a deputation of the burghers of Middelburg came to head-quarters on the sand-hills, and obtained conditions for the town, the garrison of which had evacuated it in the night, and, under the orders of General Bruce, had passed over the Sloe channel into South Beveland.

The force of the French in the island of Walcheren was now ascertained to be between 3,000 and 4,000 men, under the general of division, Monnet. Seven hundred of these held Veer, 120 fort Rammekins, and the remainder were kept together to form the garrison of Flushing.

The main body of the invading corps advanced from the sand-hills at one P.M., the right to Meliskerke, the centre to Gripskercke, head-quarters, and the left to St. Laurens; whilst the division of General Frazer invested Veer, possession of which place was almost essential for speedily or safely disembarking the siege stores and ordnance.

As the most expeditious mode of attack, some rockets were thrown into the town, and the gun-boats being brought up, directed a heavy fire on the buildings till the evening; when the commandant, Lieutenant Colonel Bogard, having sent off a detachment of 200 of his best men in small craft to Flushing, entered into a negociation, and, on the morning of the 1st August, surrendered himself and his garrison, 518 strong, prisoners of war.

Fourteen gun-boats ran from Veer during the attack through the channel of the Sand Creek between North Beveland and Wolphartsdyk, and, notwithstanding an immediate effort being made to intercept them, succeeded in reaching Tholen.

INVESTMENT OF FLUSHING.

Tuesday, August 1st.

The troops were put in movement for the investment of Flushing.

The country being too much intersected with ditches and underwood to admit of the troops acting off the high road, the French were enabled to make a stand in every village and hamlet, (particularly at Abeylen,) and retard this operation considerably. It was not till the afternoon, and after having lost a good many men and four guns, that they retired into the town. The investing force, in the course of the day, also sustained considerable loss, 1 officer and 45 rank and file being killed, and 14 officers and 200 rank and file wounded, besides 34 made prisoners.

Lieutenant General Sir Eyre Coote fixed his head-quarters in the evening in the village of West Soubourg, and Lord Chatham at Middelburg.

During the night, between 4 and 500 men joined the garrison of Flushing in boats from Cadsand.

RECONNOISSANCE OF FLUSHING.

Plate XV.

Wednesday, 2d August.

Early this morning, the engineers reconnoitred Flushing, to propose the best mode of attack.

The works towards the land were found to consist of an earthen rampart line, without outworks, except at the gateways of Rammekins and Soubourg, which were protected by ravelins.

The whole contour, however, was surrounded by a broad wet ditch, not fordable, and all the ground for miles in its front might be flooded by sluices in the counterscarp; and the only approachable points on the land side, were the two bastions on the flanks of the fortress, which were built on the sea dyke, and, being without a wet ditch, were revêted.

These bastions, however, were in a certain degree covered and strengthened by advanced flêches on the dyke, which were closed and guarded from assault by strong wrought-iron chevaux-de-frise.

To approach either of the land-fronts regularly, by an attack along the low ground, was impracticable, on account of the inundation which might be formed over it; and to direct the attack along either of the narrow dykes would be a tedious and hazardous operation: therefore, the garrison being composed of bad troops, the inhabitants disaffected, and the place altogether destitute of bomb-proof cover, it was decided to try the effect of bombardment to induce a capitulation.

The batteries to be so disposed, as to be in furtherance of approaches along the western dyke, should such a measure become ultimately essential.

ATTACK OF FORT RAMMEKINS.

2d August.

This mode of attack being approved, waiting the arrival of tools and stores to commence operations, the engineers were directed to take advantage of 250 spades and shovels, and 140 pick-axes, then on the road from Veer, to effect the reduction of fort Rammekins, which the division of Lieutenant General Frazer had blockaded.

That fort, built on the eastern coast of the island, completely blocks up the Sloe passage, which separates Walcheren from South Beveland, and by which alone the transports now at anchor off Veer could enter the western Scheldt, without passing between Flushing and Cadsand. Its immediate reduction therefore became doubly important, in consequence of the failure of the operation destined to destroy the Breskens batteries.

On reconnoitring the works of fort Rammekins, they were found to be covered by a broad wet ditch, except on the flanks, where the scarps of the bastions were quite exposed and accessible from the dykes; and it was farther ascertained that the powder and ammunition were kept in common-store rooms, there not being any bomb-proof cover within the fort.

Under these circumstances, Colonel Fyers judged that the commandant would surrender whenever heavy ordnance should open, and selected a spot for a gun and mortar battery, to be commenced at dusk.

This evening the division of Lieutenant General Grosvenor, 5,000 men, joined the besieging force at East Soubourg.

Night between 2d and 3d August.

Working party, 120 men; relieved by a similar number immediately before day-break.

At 9 P.M. a battery for three 24-pounders and two 10-inch mortars was picketted out, and commenced at 700 yards distance from fort Rammekins.

The guns were intended to breach the exposed scarps, and the mortars to try the strength of the magazines.

3d August.

At day-light the garrison directed a good deal of fire on the battery, till the 95th rifle corps were pushed forward close to the ramparts, wherever an individual could find cover; and one or other of these cool fellows fired at such of the garrison as showed themselves above the parapet, or at the embrazures, till they had silenced the fort.

In the afternoon, the battery being nearly complete, the garrison, consisting of 127 men, surrendered themselves prisoners of war.

By these rapid successes the Sloe passage became open, the communication with South Beveland assured, and a secure and favourable base established for a line of future operations through that island.

This speedy enlargement of the field of movement was of infinite importance, as the pilots refused to take charge of the line of battle ships up the Scheldt; and it appeared probable that the principal line of communication, past Flushing, would not be open for many days.

At the moment of the fall of Rammekins, the conduct of the Raven sloop of war under Captain Hanchett, excited the admiration of every one. This little vessel, in an endeavour to intercept some boats crossing from Cadsand to Flushing, remained under fire of the batteries from both sides of the Scheldt for four hours, and appeared to be suffering annihilation. It was, therefore, with great surprise, as well as pleasure, that her loss was subsequently ascertained to have been only Captain Hanchett and seven seamen wounded.

The entrenching tools, on the surrender of

Rammekins, were immediately taken back to West Soubourg; and although, in consequence of deficiency of carriage, no further supply of tools had arrived from Veer, it was decided, with the view to save time, to break ground this evening, by commencing one battery.

But, before narrating the reduction of Flushing, it will be necessary, in order to keep in view the general progress of the enterprize, to detail the movements of the co-operating divisions of the armament.

OPERATIONS IN SOUTH BEVELAND.

Plate XIV.

The navigation of the eastern Scheldt, and the depth of water in the channel, being utterly unknown, the whole of the 30th July was occupied in sounding; and the result was the unexpected discovery of there being from five to ten fathoms water, from the Room-Pot to the village of Wemelding. In consequence, early on the 31st, Rear Admiral Sir R. Keats in the Superb, 74 guns, with the transports of Sir John Hope's division, got under-weigh, ran up the channel, and anchored off Zereckzee at 9 A. M. The troops, however, could not be landed the same day, on account of a strong south-west wind.

On the 1st August, the weather becoming

more moderate, a debarkation of 2,000 men was effected at 1 P.M. on the dyke between Wemelding and Kattendyke, five miles from Goes, which town having been evacuated by the French, was entered in a friendly manner.

2d August.

Early this morning, a force under Brigadier General Disney was detached to occupy Waarden, and on its march fell in with and made prisoners about 100 Dutch troops retiring by the Sloe passage from Middelburg.

The remainder of the division being landed by noon, the next object of interest was to obtain possession of fort Bathz, standing on the south-east point of the island, and closely commanding the deep water channel of the western Scheldt.

The strength of this fort being altogether unknown to the invaders, Sir John Hope lost no time in pushing forward a force from Waarden, to reconnoitre its position and defences, and directed Captain Squire of the engineers to accompany the troops and propose an arrangement for its reduction. This party, whilst on their march, obtained information that the Dutch general Bruce, from the island of Walcheren, having first spiked the guns and destroyed the ammunition, had caused the fort to be evacuated, and had retired with all the troops from the island, about 500 men, to Bergen-op-zoom. The fort was immediately entered, and all the other coast defences, though armed with fifty 24-pounders, three howitzers, and four mortars, being found in like manner deserted, were successively occupied; and, on the evening of the 2d August, Sir John Hope had obtained possession of every part of South Beveland, and established the advanced posts of the army within view of Antwerp.*

The distance from the dyke of South Beveland at this point to the continent is something less than three miles, and it was soon discovered, that in a northerly direction from fort Bathz, at the distance of 600 yards, a ford with a good sandy bottom was practicable from dyke to dyke, for a space of about two hours at each period of low water.

The rise of the tide being twelve feet, this channel at high water appeared like a large lake; but at low water it decreased in width two-thirds, and the ford might be used for the passage of troops on any pressing emergency, when secured from naval molestation. (47)

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* The total of ordnance captured in South Beveland, including the armament of Bathz, was sixty-five 24-pounders, four 13-inch mortars, three 8-inch howitzers, and eight 6-inch howitzers.

By the concurrent testimony of prisoners, deserters, and spies, these rapid and decisive movements of the troops in South Beveland and Walcheren, had caused the French to be taken quite unprepared for resistance in the higher parts of the Scheldt. They had not yet collected five thousand disposable men, nor availed themselves in any degree of the aquatic defences of the country. Their fortified towns lay defenceless, almost without garrisons, and the fate of Antwerp, with the destruction of their fleet and arsenal, hinged on an immediate forward movement. It only required one moderate march of eighteen miles from Sandvleit, on the continent opposite Bathz, to accomplish all the objects of the enterprize.

Such an immediate forward movement was, however, perfectly impracticable, as there was not a single boat at the command of the invaders; whilst, in the river opposite to fort Bathz, more than thirty French brigs of war lay at anchor, supported by ten sail of the line and three frigates, the former of which might at any moment sail into either channel, range up along-side the dykes, or attack the fort itself: under these circumstances, defensive expedients rather than offensive movements became of primary interest, and every exertion was ordered to be made to drill the spikes out of the guns, and enable the fort to repel an attack from the water.

On the 3d and 4th August, whilst the ordnance was all disabled, the French naval force remained without movement; but on the 5th, in the afternoon, when the vents of five guns had been cleared, the flotilla approached and opened a heavy cannonade, which, however, being returned with coolness and accuracy by the fort, they soon retired.

6th August.

The navy were incessantly active in their exertions to warp some armed vessels through the Sloe passage into the western Scheldt, and bring them to the scene of action at fort Bathz; but, owing to adverse and high winds, they had not yet been able to haul a single ship through the passage.

Indeed, so tedious and difficult was the operation of warping found, that Sir R. Strachan expressed his opinion to Lord Chatham that the speediest plan to carry forward the heavy ordnance and ammunition, would be by the double operation of disembarking them on the western dyke of South Beveland, transporting them by land carriage across the island, and re-embarking them at Bathz.

Abstractedly this opinion was good, as the distance across the island was less than thirty miles, the road good, and the operation certain; but in the detail it was found to demand so much previous preparation, and the collection of such an increased number of draft animals, (in consequence of the line of land operations being lengthened from eighteen to forty-eight miles,) as might fairly be considered to ensure a delay equally great with that of hauling the transports through the Sloe passage, without offering the same chance of rapid success, which a favourable breeze might at any moment produce whilst the ordnance and stores continued afloat. (48)

7th August.

Intelligence from Bergen-op-zoom announced the garrison to have been augmented to 3,000 men, and that a strong corps from North Holland was in march to cross the Maes at Gorcum.

8th August.

The French flotilla, supported by two frigates, again advanced and cannonaded fort Bathz, which being now enabled by the exertions of Captain Wilmot, commanding the artillery, to reply with fourteen 24-pounders, obliged them to haul off with considerable loss after about three hours' cannonade.

9th August.

The division of the Marquis of Huntly, and the infantry of the division of Lord Rosslyn, and the brigades of field artillery disembarked in the Sloe passage, and were cantoned in South Beveland.

The French still retained possession of the island of Tholen with about three hundred men, and had now so far cut through the dykes of that island and those of the canal of Slyck in three places, that, having working parties in constant readiness, they were assured on any forward movement of the invaders of letting the sea in upon the flat country for miles around.

10*th August.*

In the afternoon, a division of six French gun boats got under-weigh in the western Scheldt, and boldly running past fort Bathz, sailed over the ford between it and the continent, and entered the Bergen-op-zoom channel.

A second division of gun boats, which attempted to steal past in the night, grounded on the sands, and being fired on by the fort were burned by their crews.

11*th August.*

In the afternoon, a squadron of ten brigs or sloops and forty gun boats, under Rear Admiral Sir R. Keats, which had passed into the western Scheldt through the Veer Gat on the

9th, anchored before Bathz; and at the same time 30 flat-bottomed boats, armed each with a carronade, reached the same anchorage from the eastern Scheldt, by the Bergen-op-zoom channel.

On their approach, the advanced division of the French flotilla retired to Lillo with the loss of one of their number, which grounded.

It was, however, the opinion of Sir R. Keats, that " although he thus became master of the navigation to Lillo, it was in the power of the enemy, by sending a superior naval force, to deprive him of it as far as Bathz, till some larger ships should ascend, whenever he should think fit."*

13th August.

This day the flag captain, Sir Home Popham, arrived at Bathz, and reported to Sir R. Strachan, that there was near Lillo a vice and rear admiral's flag flying, three sail of the line, and three frigates with their top-gallant yards across, nearly seventy gun-brigs and luggers, besides a great number of armed vessels of every description, independently of the line of battle ships near Antwerp.

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* Despatch to Sir R. Strachan, dated fort Bathz, 12th August, 1809.

15th August.

The islands of Schowen and Duiveland were occupied on terms of capitulation, and a garrison placed in Zericksee to ensure the resources of those islands being forwarded, for the use of the fleet and army.

Sir R. Keats this day reported to Sir R. Strachan that the French flotilla, considerably increased in number, had retired above or under the protection of Lillo; that thirteen men of war, with top-gallant yards across, are anchored off and below Antwerp as low as Philippine; also, that there are 44 gun-vessels in the passage of the east Scheldt, between Tholen and Bergen-op-zoom.

"From this representation it will be evident, that although it may not be probable the enemy will advance and attack our present situation, still that he has abundantly the means so to do until a stronger force arrives."*

With respect to the preparations of the enemy on the continent, it was ascertained that a French force of 5,000 men had entered Bergen-op-zoom, and that nearly all the Dutch garrison had marched to Antwerp; that 6,000 labourers and artificers of the dock-yard and arsenals were permanently on garrison duty at that place; that there were 1,000 troops in Lillo, and 500 at Liefhenhook, that the military inundations round those places had been formed, and the dykes of the interior polders had been nearly cut through, to render the inundation general over the low grounds when required; that there were about 7 or 8,000 regular forces assembled in a body near Antwerp, that reinforcements were on the march from every quarter, and that General Bernadotte had arrived and assumed the supreme command

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* Despatch, dated Camilla in the West Scheldt, August 15th, 1809.

16th August.

Ten frigates, which had run past Flushing on the 11th, anchored off Bathz, and gave such protection to the passage of the troops to the continent, as might be considered to justify a descent whenever the heavy ordnance with the horses to draw it should join.

Those essential engines for reducing towns or destroying ships were still on board transports in the Veer Gat, as in consequence of strong adverse winds the navy had as yet been able to warp merely a limited number of the armed vessels through the Sloe Passage.

In order to connect the narrative, it is now necessary to revert to the operations in the island of Walcheren.

ATTACK OF FLUSHING.

Plate XV.

Night of 3d August.

The engineers' means for this service were.

OFFICERS.

Colonel Fyers, commanding

Lieutenant Colonel D'Arcy —— ————— Pilkington	Directors

1st brigade, Captain Rudyerd

Lieutenants	Calder Cardew

2d brigade, Captain Birch

Lieutenants	Hutchinson Ross

3d brigade, Captain Squire

Lieutenants	Brown Jones

4th brigade, Captain Pasley

Lieutenants	Rawlinson Bonnycastle

5th brigade, Captain Macleod

Lieutenants	Trench Colby

6th brigade, Captain Boteler

Lieutenants	Longley Power

Captain Preval
——— Fanshawe
Lieutenant Meinecke

STAFF.

Captain J. T. Jones, brigade major
Lieutenant S. Dickenson } adjutants
——— J. N. Wells }

Sub-Lieutenant Robinson and 260 rank-and-file of the corps of royal military artificers were also present, and there was a very abundant supply of stores and implements at Veer; but there were neither drivers, horses or other provision of any nature for moving them.

The tools and stores actually available at this moment before Flushing, including those brought back from Rammekins, were—

Shovels		100
Spades		150
Pickaxes		140
Bills		15
Saws	Cross cut	6
	Hand	6
Sand bags bales		8
Platforms		4
Hand barrows		15

being the lading of twelve country carts drawn by two horses each.

BESIEGING FORCE.

The besieging force consisted of the divisions of Lord Paget, Major General Graham, Lieutenant General Grosvenor, Lieutenant General Frazer, and a reserve under Brigadier General Houston, mustering altogether 17,000 men.

Night between 3d and 4th August.

At dusk, as many men as could be furnished with tools paraded for work, and by direction of Lieutenant Colonel D'Arcy commenced battery No. 1, for six 10-inch mortars, on the highest level which could be found within a reasonable distance of the place. It was 1,400 yards from the centre bastion, and 1,900 yards from the left flank of the town, against which it was intended particularly to operate.

4th August.

There being no means of transport whatever allotted to the department this day, little more could be done than to continue to raise battery No. 1, and to make fascines and gabions. As such materials might become generally necessary should the wet weather continue to prevail, Captain Preval, with a hundred seamen and fifty royal military artificers, were allotted to this employment as a permanent duty; and the copses in the vicinity offering a most abundant supply of the best species of trees and shrubs, a very large number of both were speedily prepared.

Three schuyts full of men were this morning observed to run across from Cadsand to Flushing in seventeen minutes.

5th August.

Eighty-six country carts having been allotted to bring up a turn of engineers' stores from Veer, battery No. 2 for ten 24-pounders, for the general enfilade of the left fronts of the place, was commenced at 1,400 yards from their salients and 1,000 yards from the centre bastion; also a trench or species of parallel, as cover for a guard of support, on its right and left.

The weather was very bad and very unfavourable to the work, being a succession of gales of wind and heavy showers of rain.

About 400 French troops passed early in the morning from Cadsand to Flushing.

6th August.

Two light battalions of the King's German Legion being landed from the transports in the Veer Gat came on duty in the trenches.

It being thought expedient that some of the ordnance should be put in battery on the eastern dyke, a proportion of tools and stores were transported to the left from West Soubourg.

Preparations were also made for establishing a battery of six mortars, No. 5, on a bend of the western dyke (the Knolle point) which presented a considerable front to the town at the distance of 1,250 yards.

The garrison maintained a good deal of artillery fire on the working parties, and pertinaciously kept out some very advanced pickets, which fired musketry with effect, and the loss of the besiegers, between the 2d and 6th, amounted to 1 officer and 25 men killed, 9 officers and 118 men wounded.

Nine boats full of men crossed from Cadsand during the night.

Sixty-two country waggons laden with platforms, tools and stores, reached the depôt in front of Soubourg in the evening.

7th August.

Batteries No. 3 and 4, on the eastern dyke, were commenced for seven pieces of ordnance.

The artillery planted the mortars in No. 5.

In consequence of the non-debarkation of the troops in Cadsand, and incessant gales of wind from the S.W. and S.S.W. baffling the most persevering efforts of the navy, the sea blockade of Flushing had not yet been effected, and the French had, since the 1st August, availed themselves of this opening to ferry over nearly 2,000 men, which, having augmented the garrison to

5,000 effectives, General Monnet determined to make an offensive movement.

The sortie advanced through Old Flushing about 5 P.M., and attacked the right of the besieging corps, apparently without object or motive, as no works were in progress on that point, and the troops were nearly a mile from the fortress.

The attack was made with great spirit upon the division of Lieutenant General Graham, which had a sharp affair, and lost 13 rank and file killed, and 8 officers and 126 rank and file wounded, in driving the assailants back.

On their repulse, some posts were established in more advanced situations on the right, with a view to check any further offensive efforts.

A redoubt, No. 6, was picketed out and commenced this evening, to give more security to the left of the parallel against sorties.

8th August.

This morning Colonel Fyers, who had hitherto exercised only a very general superintendance, assumed the direction of the details of the attack.

In consequence of the increasing force of the garrison he proposed to augment very considerably the weapons of attack; and the Knolle Dyke presenting a favourable front for enfilading the sea defences of the town, battery No. 5 was enlarged to contain twelve 24-pounders, six mortars, and two howitzers. Battery No. 2 was also enlarged to contain four heavy mortars; and he further proposed to connect the two flanks of the attack by a parallel. Captain Birch, with his brigade, was charged with these operations on the right, and at dusk they were all commenced with activity.

The artillery partly armed battery No. 2.

The garrison kept working parties diligently employed in creating advanced defences on both dykes and in front of the centre of the town; and it was evident, from a constant current in all the ditches, that they were raising an inundation in their front by means of their sluices.

Since the commencement of the attack, it had been ascertained by accurate measurement that the general level of the island was about 4 feet 6 inches below ordinary high water mark, and that many parts of the interior were even 9 feet 6 inches below that point. It had been further ascertained that Middleburg was nearly three feet lower than Flushing, and consequently, that the sluices at the former place being opened, would tend to lower and draw off any inundation formed round the latter: in consequence, Lord Chatham gave orders that the sluices at Middleburg should be kept open during the whole period which the tide would admit of the water ebbing out of them, and such was the practice from this day till the conclusion of the attack.

It should be mentioned that the labours of the besiegers were a good deal impeded by a general order of this day's date, which, under the view of rendering the men less conspicuous to the garrison, directed that they should constantly wear their great coats whilst at work.

In the middle of the day, this additional clothing became so oppressively hot that they were unable to exert themselves, and during bad weather it made the men independent of bodily exertion for warmth.

The flotilla and bombs effected the investment of Flushing on the sea side. From this time till the expiration of the service, the crews of the boats, both officers and men, underwent a degree of hardship in the performance of their duties not often surpassed, being incessantly exposed to the weather, and sometimes placed for days together in situations where no issue of food could be made to them.

9th August.

The workmen continued their labours steadily on the several batteries and communications, and the parallel opened last night.

This latter work could not be traced in a right line on account of innumerable ditches and dykes, but was made to follow the contour of the most favourable ground, as shown on the plan.

The brigades of carpenters worked by stated reliefs in preparing and putting up the splinter-proof magazines, and laying the platforms as fast as they could be obtained from Veer.

10*th August.*

The water began to rise to a very inconvenient height but in a very irregular manner, forcing back into an opposite direction the usual current of the water-gangs, so as to overflow their banks and cover some of the meadows and fields, and to form considerable pools in the lower spots; but certainly not with the rapidity which might have been expected.

This was accounted for by a staff officer made prisoner in returning from Flushing to Cadsand, who stated that the sea dykes were cut by an order from Napoleon; but that General Monnet, knowing the consequences were likely to be the utter destruction of the island with its inhabitants, performed the operation with great caution and great repugnance.

The working party at dusk was 911 men on the left and 450 men on the right.

It being justly due to the seamen, attached to the besieging force, that they should have a battery to themselves during the approaching bombardment, No. 8, for six 24-pounders, was marked out in a situation to take in flank the advanced works of the garrison on the western dyke, as well as to bear generally on the left of the defences of the town. The activity and intelligence of these seamen merit particular notice, and to show the extent of their labours the words of Captain Richardson's report are here quoted:—

> "The detachment proceeded to East Soubourg, and were employed day and night in cutting fascines, erecting batteries and drawing heavy ordnance into them, the artillery horses being found inadequate to perform that service from the narrow roads, darkness of the nights, and difficulty of driving clear of ditches, into which they had thrown several 24-pounder guns and carriages. This important duty, from the heavy rains and soft muddy soil, was attended with the greatest difficulty and fatigue."

11th August.

Working party—left 900, right 450.

These were told off to the different works as usual, but the night proved so exceedingly wet, stormy and dark, that little could be done to forward the attack: indeed, the rain and the rising of the inundation had made every part of the low ground so swampy that it was with difficulty men could walk over it in the dark.

A squadron of ten heavy frigates, led by Lord W. Stuart, got under weigh about 7 P.M. from the Duerlo anchorage and passed up the Scheldt, and though under fire of the sea batteries from both sides for more than an hour, sustained a loss of only 2 killed and 9 wounded.

The Lavinia, however, was struck by a shell, which penetrated through her decks into the bread room where it exploded, killing one man and wounding four others, and much shattering her stern-frame.

Battery No. 3 opened on the town at the time of the frigates passing, by order of General Picton; but its fire was countermanded as soon as observed at head-quarters.

Saturday, 12*th August.*

Notwithstanding the discharge from the sluices at Middelburg, and parties of 2 and 300 men being incessantly at work to keep the drainage ditches clear, raise their banks, and dam the water off from the trenches, the inundation now passed over the crest of the parallel at some low spots, and threatened to render the communication with the left batteries impassable.

In consequence, battery No. 7 was traced out on a slight elevation of ground to receive the ordnance from such batteries as might become unserviceable from the inundation.

To ensure its rapid completion, the royal military artificers only were employed in its construction, and there being little fire directed on the spot succeeded in completing it in twenty-eight hours.

With the same view, of hastening the completion of battery No. 8, the seamen, under Captain Richardson, destined to man the guns, were employed to help to raise it.

A squadron of six sail of the line anchored off Dykes Hook at the mouth of the Scheldt, and two line-of-battle ships in the Weilinge passage.

Sunday, 13th August.

ARTILLERY OPERATIONS.

STAFF OFFICERS PRESENT.

Brigadier General Macleod, commanding.
Captain Drummond, A. D. C.
Captain Gardiner, brigade major.
Captain Brown, adjutant. (49)

All the batteries except No. 8, with the platforms, magazines, &c. being ready, their armament was completed as follows:—

No. 1 . . .	10-inch mortars .	6
No. 2 . .	10-inch do. . . .	4
	24-pounders	10
No. 3 . . .	24-pounders	3
No. 4 . . .	10-inch mortars . . .	4
No. 5 . .	24-pounders . . .	13
	8-inch mortars . .	6
	8-inch howitzers . .	2
No. 7 . . .	10-inch do. . .	2
No. 8 . . .	24-pounders . . .	6

The arrangements for the ammunition were, two days' consumption in the magazines at the rate of 200 rounds per gun and 100 per howitzer, and one day's consumption at the same rate of firing in depôt at East Soubourg, with the means of a daily replenish to the same amount from the ships at Veer.

At 1 P.M. the above-mentioned batteries, except No. 8, opened by signal, and at the same moment two divisions of gun and mortar boats, from stations on the S.E. and S.W. of the town, commenced their fire, as did some batteries of rockets on the left of the trenches; and these united continued to pour a stream of fire on the buildings without a moment's intermission till dark.

Occasionally flames were observed to burst forth furiously from a house or two in different quarters of the town; but General Monnet found means to extinguish them, and prevent any general conflagration taking place.

The garrison returned a good deal of fire towards evening, principally on the Knolle point battery, and disabled one gun and wounded another. They also struck the Indignant mortar-boat two or three times between wind and water, and with difficulty she reached Zoutland Bay before she sunk.

It was the intention of Sir R. Strachan to have brought up the squadron from off Dykes Hook, to have taken part in the bombardment, and he had every thing prepared to weigh, but the wind being from the south-west was too scant to admit of the ships moving.

Night between 13th and 14th August.

At dark the besiegers' guns and the gunboats ceased their fire; but discharges of carcasses and shells from the mortar batteries, with powerful flights of rockets intermixed, were kept up throughout the night on the devoted town, and frequently large portions of it burned with fury.

In consequence of the rapid rise of the inundation, and in furtherance of a regular attack should the bombardment fail to induce the surrender of the place, battery No. 10, for six 68-pounder carronades, was commenced on the western sand hills, to breach the scarp of the left demi-bastion, and by the activity of Captain Birch was much advanced during the night, and good communications made to it from the rear.

Previously to this service, an advanced flêche on the dyke occupied by the garrison was stormed and carried by a detachment under Lieutenant Colonel Nicholls, which captured a gun and brought off thirty prisoners, with the loss of only eight killed and wounded; but amongst the former was unfortunately Captain Talbot of the 5th regiment.

Colonel Fyers, whilst making observations with his glass from this point, was struck on the chest by a musket ball, fired by a picket posted in Old Flushing. The distance of the picket being little more than 100 yards, the blow must have been fatal had not the ball luckily passed through a few inches of sand forming the crest of the parapet.

Monday, 14th August.

The artillery and bomb vessels, aided by six additional 24-pounders manned by seamen in battery No. 8, continued the bombardment this morning with unabating vigour.

The mortars were directed over the western quarter of the town generally; but the guns of the batteries on the right of the attack were more particularly directed to enfilade and take en echarpe the rampart of the western sea-line, in order to silence the fire of its artillery on the fleet, now preparing to force the passage of the Scheldt. This they accomplished very effectually, by disabling or severely wounding many of the traversing platforms and their carriages, and much injuring the guns themselves.

In consequence of the quick firing maintained, both by guns and mortars, the expenditure of ammunition was so great, that the proportion sent for the attack became nearly exhausted, and it was found necessary, in order to support the same rate of firing, to have recourse to the proportion intended for the siege of Antwerp.

At 11 A.M. seven line-of-battle ships under Sir R. Strachan stood up the Scheldt, maintaining an incessant fire from both broadsides till 2 P.M. This enveloped them in such clouds of smoke, as to render them almost imperceptible from the place, which, nevertheless, replied steadily from several guns and mortars mounted on the works next the harbour, as the ships passed before them.

The admiral's ship, the St. Domingo, in leading, grounded inside the Dogland, which not being observed by Lord Gardner, who followed in the Blake, she also grounded; but both ships were hauled off without damage, and the whole squadron anchored above the town, with scarcely a casualty from the fire of the batteries.

The guns of battery No. 5 were now principally directed against the revêtement of the left demi-bastion, and although at the distance of 1,250 yards, struck it very frequently and with much effect. The outwork on the dyke, with iron chevaux-de-frise around it, was also much knocked about, and rendered nearly defenceless.

The general bombardment of the town from the batteries and mortar-boats and rocketers never relaxed in force for a moment till 4 P.M.; when the artillery of the place being completely silenced, the town blazing furiously, the left demi-bastion almost in ruins, and the outwork in its front abandoned, Lord Chatham ordered a cessation of hostilities whilst he sent to offer terms to the garrison. At 9 P.M. the negociation was broken off, and the batteries resumed their fire on the town.

Night between 14*th and* 15*th August.*

At this time the inundation covered in some degree the whole surface of the ground between the batteries, and the town, and the garrison were seriously occupied in cutting through the eastern dyke to let in the sea: as such a cut would throw four or five feet of water over all the batteries, except those on the dykes, it became an object of primary interest to dislodge the garrison from their outposts on that side, and confine them to the town. This service was confided to Lieutenant Colonel Pack, with a party of 200 men, who stormed a field work, advanced on the dyke about 600 yards from the place, in a gallant style, killing many of the defenders, and making 40 prisoners, with a loss to the assailants of 1 officer and 7 men killed, 4 officers and 23 rank and file wounded; amongst the latter was Captain Pasley, the engineer on duty.

The breaching battery on the western sand hills, No. 10, was nearly completed, and a trench for musketry established in its front by 3 A. M., when General Monnet's resolution being overcome by the constant bombardment maintained on the town, he sent to offer his submission, and the batteries were ordered to cease firing.

15th August.

At 1 P. M. Colonel Long, adjutant general, and Captain Cockburn, Royal Navy, went into Flushing with full powers to arrange articles of capitulation, which was finally effected by 11 P.M.

16th August.

This day was granted to the garrison by the capitulation to prepare for embarkation.

17th August.

In consequence of a representation from General Monnet, that his garrison would not be prepared to march out till noon, and the place of embarkation, Haak, being ten miles distant, it was considered there would not be sufficient day-light to effect that operation, and it was determined to postpone till the morrow taking possession of Flushing.

The two light battalions of the King's German Legion, which had assisted in the duties of the siege, rejoined their division in South Beveland.

18th August.

At 9 A.M. the garrison marched out, and laid down their arms as prisoners of war:—viz. 2 generals of division and 200 other officers, with 4,983 rank and file, leaving 618 sick or wounded in hospital, and delivering over to the captors 224 pieces of mounted ordnance, 55,000 shot, 4,000 shells, and 2,000 barrels of powder.

On entering the town the left bastion and the houses in its rear were found almost in ruins, and the sea defences on that side were a good deal injured and many of the guns dismounted; but the works on the land fronts generally were in a perfect state. The loss of the garrison from the bombardment had not been great, as General Monnet kept all the troops off duty on the right, under shelter of the ramparts; but 335 of the inhabitants were killed, and a still greater number wounded. The Stadt House, 2 churches, and 247 houses were utterly destroyed, and the whole of the left of the town more or less injured. (51)

Ammunition expended by the batteries:—

No. of Pieces.	Nature.				
32	24-prs.		fired	6,582	rounds.
14	10-in.	mortars	do.	1,743	do.
6	8-in.	do.	do.	1,020	do.
2	10-in.	howitzers	do.	269	do.
2	8-in.	do.	do.	380	do.
			Total	9,994	

Of this number, the six 24-pounders in the seamen's battery, No. 8, which opened on the morning of the 14th, fired 1,300 rounds; being probably the quickest rate of firing ever maintained for the same period.

Memorandum of Means of Transport furnished to the Engineer Department during the Attack.

	Country waggons with two horses, loaded with about fifteen cwt. each.
1st August	none.
2d	5 waggon loads.
3d	7
4th	none.
5th	86 waggon loads.
6th	62
7th	35
8th	30
9th	17
10th	37
11th	23
12th	17
13th	27
14th	19
Total	365

Each of the 65 platforms brought up weighed one ton and a half, and consequently they employed nearly half of the total carriage. (50)

OPERATIONS SUBSEQUENT TO THE CAPTURE OF FLUSHING.—*Plate XIV.*

18*th August.*

The line-of-battle ships anchored off Waarden, and the Courageux 74 ran up the Scheldt above Bathz.

19th August.

The division of Lieutenant General Grosvenor of the besieging force embarked at Rammekins, to proceed up the Scheldt to Bathz.

20th August.

Two regiments of General Graham's division embarked at the same place, for the same destination.

The annual endemic fever of the country now began to manifest itself amongst the troops in South Beveland, and this day above 1,500 were in hospital.

21st August.

The remainder of General Graham's division embarked at Rammekins, but the wind blew so strong into the Sloe passage, that the transports could not get into the west Scheldt.

The transports, with part of the cavalry, reached Bathz.

Lord Chatham transferred his head-quarters from Middelburg to Goes in South Beveland, where they remained the following day.

23d August.

The transports, with Lieutenant General Grosvenor's division, reached fort Bathz. Head-quarters moved to Crabbendyke.

24th August.

The transports, with the last of the cavalry, heavy artillery, and General Graham's division, attained the anchorage off Bathz, and head-quarters were established in the fort.

The ordnance transports weighed anchor off Flushing at 6 A.M., and most of them reached Bathz by 2 P.M.

Thus, the whole of the disposable force under Lord Chatham, consisting of 23,000 infantry and 3,000 cavalry, with the heavy artillery and stores, were now assembled at and near fort Bathz, and, protected by the fleet, were prepared to disembark on the continent and lay siege to Antwerp.

The aspect of affairs had, however, totally changed since the advance of the army reached this point on the 2d August.

The French had recovered from their surprise, had formed their inundations, repaired and armed and put efficient garrisons into their fortresses, had collected a disposable army, exceeding 25,000 men, round Antwerp, and had flooded all the low country between Bergen-op-zoom and Tholen, as well as that in the vicinity of Lillo and around Antwerp.

Therefore, after examining the best places for passing to the continent on the 25th, and holding many discussions on the subject on the

26th, it was unanimously decided on the 27th August, at a meeting of the seven lieutenant generals of the army, "that the siege of Antwerp was impracticable, and that no possible advantage could result from undertaking any minor operations."

In consequence of this opinion, measures were taken for falling back on Walcheren; and the anchorage off fort Bathz, being so crowded with shipping and craft of every description, that it was possible an enterprising enemy might find means to make a general conflagration amongst them, the transports with the cavalry were ordered to drop down the river this same evening.*

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* This failure, which for a season clouded the prospects and dimmed the brilliancy of the British arms, must be attributed merely to the length of time occupied in attaining the point of debarkation on the continent with sufficient means to reduce Antwerp. Neither of the co-operating services ought in fairness to be charged with the blame of this delay. The unceasing energies and zeal of the navy, directed on this occasion by the professional abilities of such officers as Strachan, Gardner, Keats, Owen, and Popham, leave no doubt of every nautical exertion having been made. The land operation so judiciously proposed by Sir R. Strachan, and so generally desired by the army, viz. substituting horse carriage for water carriage, has been discussed in Note 48, and shown to have demanded means beyond the reach of Lord Chatham; or a period of time which would have ensured ultimate disaster.

Nevertheless, taking the localities of the Scheldt into consi-

28th August.

The number of sick in hospital amounted to 4,000, with disease rapidly spreading through every corps.

29th August.

Head-quarters retired to Goes, and the evacuation of South Beveland, Schowen, and North Beveland commenced.

With a view to cover the passage across the Sloe, batteries were established on the dyke near the ferry-house, and in the island of Joostland.

2d September.

Head-quarters were re-established at Middelburg.

deration, and the various difficulties attending the several plans of operation proposed and discussed, for reducing Antwerp and destroying the French fleet, perhaps this, which so utterly failed, offered the best chance of success.

It was, however, altogether dependent on wind and weather, and both proving most unusually rough and adverse for the season of the year, served to baffle a design, which, magnificent in preparation, and mighty in strength, would have borne down all human opposition. Had the elements favoured instead of opposed themselves to this armament, there can be no doubt that it would, on the fourth day from quitting England, have been as far advanced in its operations as on the thirtieth day, and have obtained most rapid and complete success; and then would the foresight, the sagacity, and skill of its authors and commanders have been a theme of as universal panegyric as their blindness, their folly and ignorance have since been of unqualified reproach.

The number of sick this day was 6,000, and on the 3d exceeded 7,000.

4th September.

The number of sick had increased to 8,194.

The evacuation of South Beveland and the other islands being completed, and all the force of the army concentrated in Walcheren, the defence of that island became the chief subject of interest.

On the 17th August, Colonel Fyers had been directed to prepare plans, and submit to Lord Chatham such measures as he considered best adapted for the security of the island of Walcheren, but more particularly for strengthening the defences of Veer, Rammekins, and the island of Joostland; and it appearing to him, after a good deal of consideration, that the basis of defence laid down for Flushing in the decree of Napoleon, dated the 26th March, 1808, was also that most applicable to its occupation by England, viz.

1. "The defence of Flushing rests on inundations: whenever an enemy appears the dykes must be cut, and the island laid under water.

2. "Nevertheless, an enemy can always approach by the dykes; besides which, the entrance of the harbour must be protected, in order to maintain the com-

munication with Cadsand: consequently, a point must be occupied on each dyke, at about 1,000 toises from the entrance of the port, so that on neither side shall an enemy be able to establish himself within 1,200 toises. At that distance cannon lose their effect, and Flushing cannot be blockaded."

He had since endeavoured to form a plan of a limited inundation, which should have the effect of rendering Flushing secure from attack, without overwhelming the island in that general destruction to which it was doomed by the first article of the above sweeping decree of Napoleon. With this view, Colonel Fyers proposed to finish the forts on the dykes already commenced, in conformity with the decree, and by means of an interior counter-dyke, (between three and four miles in length,) passing across the whole breadth of the peninsula in front of Flushing, from sea dyke to sea dyke, and its extremities resting on the new forts, to confine the inundation to a radius of 2,200 yards from the ramparts. This inundation to be fed by large sluices, to be formed under the works of Flushing, so that should an enemy cut the interior counter-dyke, such a flow of water might be maintained over the ground between the town and dyke, as would prevent all possibility of his carrying on approaches over it.

As neither the troops nor inhabitants could

8th September.

The sick had increased to 10,948.

14th September.

Lord Chatham, having made an arrangement for leaving 16,766 rank and file to garrison the island of Walcheren, and having embarked the remainder of the army for England, gave over the command of the forces to Sir Eyre Coote.

From this period the sickness increased with alarming rapidity.

On the 16th September, notwithstanding the weekly removal to England of some hundred sick men, the number of troops in hospital amounted to 7,535
On the 19th 8,123
21st 8,684
22d 8,799
23d 9,046
and on that day month, 23d October, the effective force in the island was reduced to 4,000 men.

The sick increased during that week 300, making the number in hospital 6,000, and the deaths daily averaged from 18 to 21.

From the commencement of November the sickness almost ceased to spread, but the convalescents in the island had frequent relapses and very few became again fit for permanent duty. (52.)

29th October.

Sir Eyre Coote returned to England and was replaced in the command by Lieutenant General Don, who reported home, that 5,638 sick required to be transported to England, and that the force in the island only amounted to 4,534 men.

3d November.

Lieutenant General Don further reported "That the island is almost in a defenceless state, and that the army is so much reduced as not to be able to cope with the enemy in the field; and only capable of holding the town of Flushing until the enemy can open mortars and ricochet batteries against it."

The French had now, besides garrisoning all their fortresses, assembled a field army near Antwerp of 22,600 men, and had pushed a corps of 7,000 troops into South Beveland. They had also put their marine into a state of activity and had greatly increased their flotilla, and were erecting batteries to command both entrances of the Sloe Passage.

Under these circumstances, it being decided to retain possession of Walcheren as long as any points of discussion should remain open between Austria and France, General Don endeavoured to compensate for the weakness of his garrison by the erection of field works. These were principally on the dykes in advance of Flushing, and on the dykes of the eastern coast between Ter Veer and Armuyden and the line of Joostland, and were pressed forward with much activity till the 16th November; on which day orders were received, dated the 13th, for the evacuation of the island, "after taking such measures as should be judged most effectual for the destruction of the basin of Flushing and the naval defences of the island." (53.)

26th November.

The work of destruction commenced under the direction of Lieutenant Colonel Pilkington.

The wooden wharfing of the dock-yard and eastern side of the basin (the western side was spared from the mischief which its destruction would have caused to the town) and the breakwater at the entrance of the harbour were destroyed by the manual labour of a party of seamen at low water.

The parapets of the sea defences were thrown over, the arsenal, magazines, slips and every building belonging to the naval establishment were burned; and the entry of the port was blocked up by means of ships laden with heavy materials being sunk in the channel.

The piers and abutments of the flood gates, at the entrance of the basin, were destroyed by mining.

Plate XIV. Fig. 2.

Four shafts (*e*) were sunk at the back of the wall supporting each half-gate, to a depth considered to be seven feet from the bottom of the foundation of the masonry; and, at that level, a gallery was run horizontally beyond the centre of the wall, so as to leave a line of least resistance, of seven feet, in the direction of the hinges of the gates and their abutments. At the extremity of the gallery, a return of two feet was made, and a chamber (*b c*) formed; the floor of which was from six to seven feet above the bottom of the foundation of the piers.

Each chamber was loaded with 120 lbs. of gunpowder, and the gallery was tamped for its whole length with bags filled with sand. This charge of 120 lbs. was apportioned, as being the smallest calculated as sufficient to effect the object of ruining the gates, from apprehension of doing injury to the houses on the quay, or the quantity of powder should have been one half greater.

9th December.

The guns and stores being all safely on board, the troops, with the exception of small detachments left to occupy Veer, Flushing, and Middelburg, were embarked.

11th December.

The mines of destruction, formed in the masonry of the flood gates, were exploded simultaneously this morning.

The explosion was scarcely perceptible at a little distance, but it served completely to shake the wall and rend it through in various places as shown on the plan, though not to overturn it.

This destruction being effected, nothing remained but to withdraw the troops. Contrary winds, however, detained the transports in the roads till the 23d December; on which day it became fair, and the complete evacuation of the island was accomplished.

SURPRISE

OF

BERGEN-OP-ZOOM.

PLATE XVI.

It is very rarely indeed that the bulk of men, whether in professional or civil life, judge correctly of military enterprizes. Success almost invariably draws forth their unqualified applause; and failure too generally their reproach, as being the offspring of rashness, imbecility, or misconduct.

The unsuccessful attempt made by Sir Thomas Graham in 1814 *to surprise Bergen-op-Zoom, has been included in this general sentence of condemnation, to an extent which the occurrences of the night by no means appear to warrant.*

This must be imputed to the very slight account of the operation hitherto published, and the absence of all discussion on its details. Daring enterprize, however, when judiciously undertaken, adds so much to the force and character of an army, by the energy and confidence it inspires in its ranks, as well as by the distraction and distrust it generates amongst its opponents, and, moreover, is of such rare occurrence, that it becomes almost a national object to uphold any effort which can bear that stamp. It is, therefore, to be hoped that some actor in the scene on the 8*th March, fully qualified, will clearly and candidly point out the several causes which led to failure and the capture of the assailants; that any errors of plan or execution may be corrected or avoided in future wars, and one failure be compensated by the success of a hundred similar enterprizes.*

In the meanwhile, the following compilation from the Gazette, the Narrative of the French Colonel Le Grand, and Notes written on the spot in the summer of 1814, *under the eye of the guide who proposed the enterprize, and led the columns into the place, is submitted as an attempt to throw some light on those points.*

CHAPTER VIII.

SURPRISE OF BERGEN-OP-ZOOM.

Plate XVI.

THE defences of Bergen-op-Zoom were remodelled by General Coehorn in 1688, with the view of giving the greatest practicable degree of strength to the right flank of the lines of Steenbergen, at that period regarded as the most valuable defensive barrier of Holland.

As the place had a secure communication with the flotilla, and the garrison could always be relieved or reinforced to any extent from the troops in the lines, the works were traced on a very extensive scale, for the double purpose of better defence, and that the town might be sufficiently capacious to contain supplies for an army.

The details of the fortifications were happily adapted to these peculiarities, and to the nature of the ground, so as to combine great strength with the utmost economy:—Within the lines of Steenbergen from 13 to 10, their construction is the most simple possible, being merely bastioned fronts with demi-revêtements of 16 or 18 feet in height, covered by very low revêted counterscarps, from which revêtements the earth rises at an angle of 50° to the summit of the parapet and level of the covered-way.

The fronts 1, 2, 3, 4, in rear of fort d'Eau, being covered by a marsh overflowed at high tide, and having a great command of water defence, were constructed without any revêtement; whereas, the fronts between the marsh and the lines of Steenbergen, 4 to 9 having but few natural advantages, were constructed with a variety of outworks flanked by galleries for reverse fire in their counterscarps, and were extensively countermined; and further, their right flank was supported by a system of detached lunettes, 16, 17, 18, to obtain for that point a corresponding degree of strength with that given to the left by the lines of Steenbergen.

Thus, under the original view of forming the right of an extensive line of defence, and being always open to maritime succour, as well as being in constant communication with an army in the lines, and therefore assured of an ample garrison, Bergen-op-Zoom justly merited the reputation of a place of the greatest strength, and afforded a good specimen of the art of fortifying; particularly during those happy eras of war, when undisturbed repose in winter quarters, invariably repaid the fatigue of a summer's campaign, and left no apprehension for the efficiency of water defences during hard frosts.

Bergen-op-Zoom, however, viewed as a blockaded fortress, with a very inadequate garrison of foreign troops, its maritime communications cut off, the lines of Steenbergen thrown down, the inhabitants disaffected, if not hostile, and a winter of unusual duration, was certainly the weakest possible place, and could not but present an inviting object of enterprize to an enemy.

General Sir Thomas Graham, who commanded a corps of 9 or 10,000 British troops, disembarked at Willemstadt at the end of 1813, for the purpose of aiding to expel the French garrisons from Holland, justly viewed it in that light; and having reason to believe from the reports of some of the inhabitants who found means of daily egress and ingress, that the garrison little exceeded 2,000 men, that the entry into the town by the mouth of the river Zoom, which is nearly dry at low water, was very indifferently guarded; that the ice on the ditches was but partially broken; and that the severe frost would prevent the garrison from using their sluices to raise or lower the ice, or to fill the ditches usually kept dry, decided to attempt to surprize and escalade the place on the night of the 8th March.

The command of the enterprize was entrusted to Major General Cooke, and the arrangements were for 3,300 men to march in three columns from their cantonments, and be at their several places of attack at half past 10 P.M., being the hour of low water.

One column under Major General Skerret and Brigadier General Gore, consisting of 1,100 men, was to advance by the Tholen Dyke, and enter the town by the channel of the Zoom, between bastions 1 and 15; then to ascend the rampart of fronts 1, 2, on their right, and advance along it to form a junction with other columns intended to enter by escalade.

Officer of engineers, with this column, Lieutenant Sperling.

A second column, consisting of 1,200 men, under Lieutenant Colonel Morrice, to escalade fronts 9, 10, which being immediately next to the lines of Steenbergen, and covered by a broad inundation, was one of those on a simple trace.

Captain Michell, of the royal artillery, volunteered to act as engineer and accompany this column.

A third column, consisting of 1,000 of the guards, under Colonel Lord Proby, was to march round the right flank of the lunettes of the retrenched camp 17, 18, cross the broad ditch of fronts, 3 and 4, on the ice, and mount the unrevêted rampart.

Officers of engineers, Captain Sir G. Hoste and Lieutenant Abbey.

In addition to the above, a false attack by a body of 650 men under Lieutenant Colonel Henry, was ordered against bastion 12, (in the right face of which is the Steenbergen gate,) to distract the attention of the garrison.

These several assaults and demonstrations to be made simultaneously.

Such was the plan for the surprize and escalades. The defensive arrangements of General Bizanet, dictated by the peculiar nature of the defences, seemed as if planned expressly to counteract the project of the assailants; for having a very insufficient garrison, (only 2,700 effective men under arms,) he kept no force in any of the outworks, except those covering the several gates, where he posted small guards in the retrenchments of the lunettes, to watch the approach to the bridges and gates.

In fort d'Eau he shut up only sixty men, and to the redoubts of the retrenched camp allotted only twenty men to raise an alarm should any hostile body approach the unrevêted fronts; and by these excellent arrangements kept nearly the total of his force concentrated under his own hand. Within the fortress, also, he acted on a similar system of concentration, for having established a few small posts in sheltered bivouacs on the ramparts, ready to move in an instant on any point attacked, he directed the remainder of the garrison to assemble, in the event of an alarm, on the weak fronts 11, 12, 13, and in reserve on the place of arms; which being centrically situated, with direct communications to the gates and rampart, was convenient to succour any point. The field artillery were also to assemble at this spot, or on bastion 12, being the centre of the weak fronts.

On the night of the 8th March, between 9 and 10 o'clock, the officers of the garrison being mostly assembled at General Bizanet's quarters, were called to arms by a sharp musketry fire at the gate of Steenbergen (bastion 12). This was the false attack under Lieutenant Colonel Henry, which, having fallen unexpectedly on the French guard in the lunette, had bayonetted it, and reached the drawbridge without opposition; and not being provided with instruments of destruction, were endeavouring to open the gate by main force, when discovered from the ramparts. The posts en bivouac immediately opened a musketry fire on the assailants, the artillery of the front soon afterwards joined in a general discharge of grape, and the reserves hastened to the spot; when the attacking forces being overwhelmed with every nature of fire, was repulsed with very great loss. In the morning the bodies of many of the assailants, stretched on the top of the demi-revêtement, or lying on the sill of the gate-way, proved the daring intrepidity with which this attempt had been made.

Immediately after the failure of this bold effort to force the Steenbergen gate, the column under Major Generals Skerret and Gore, marching along the Tholen Dyke, arrived at the sluice of the inundation undiscovered. They then descended from the dyke to their right, and keeping along the foot of the glacis, entered the mouth of the harbour on a front of six or eight men, and waded in between two and three feet depth of water, along the bed of the Zoom. A guard boat stationed at the mouth of the harbour fired a shot or two on discovering their approach, and immediately rowed away. The only obstacle the assailants subsequently met with, was a number of iron crows' feet scattered over the bottom of the channel, which however failed to arrest their progress for a moment, and the column, about a quarter before eleven o'clock, found itself within the fortress with scarcely a man disabled.

All the reserves of the garrison having been very inconsiderately directed to the Steenbergen gate, on the alarm created by the false attack, no sufficient force could be brought to the harbour in time to oppose the further movements of the assailants, and they, almost unmolested, seized and forced open the Waterport gate in the curtain of fronts 1, 2. Six hundred men were ordered to take post at the gate, to keep open the communication with the exterior, and admit the column ordered to escalade the unrevetted fronts on its left, 2, 3, 4; whilst the right wing of the 44th regiment, about 150 men under Lieutenant Colonel the Honourable George Carleton, should patrol round the rampart to the right; and General Skerret, with a similar force of the same battalion, make a reconnoissance along the rampart of fronts 15, 14, 13 to their left. This latter small body speedily came in contact with a superior force of the garrison, assembled on the weak fronts, and after a fruitless endeavour to penetrate to bastion 12, (the point of the false attack,) fell back to join the troops at the Waterport gate; but, on reaching the mouth of the harbour, found the tide had risen so much that the channel was no longer fordable. General Skerret was consequently separated from all junction with his division, except by the narrow foot-bridge B, over the harbour in the town, respecting the situation of which he was ignorant; and no alternative remained but to take up the best position he could find on the ramparts. He first selected bastion No. 13, which being partly hollowed out and flanked by a stone windmill, of which he had possession, seemed to offer a good position for inferior numbers to defend themselves. In this bastion, being attacked by a body of infantry, he successfully resisted their efforts, till three field-pieces with grape shot were brought up, and made such destruction amongst his men, as to induce him to fall back on bastion 14, the gorge of which he barricaded with logs of wood, to serve as a defensive parapet, and enable him to wait the issue of the enterprise.

Lieutenant Colonel Carleton, with his detachment of the 44th regiment, having made an opening in a row of palisades, which separated the demi-bastion 2 from bastion 3, proceeded along the rampart to his right.

The whole of the reserves of the garrison had been most injudiciously again marched in a body to oppose the attack at the mouth of the harbour,* and Colonel Carleton continued his progress almost unopposed along the fronts 4, 5, 6, 7, and 8, making the small posts of the garrison throw down their arms to bastion 9; when the French troops, coming up in force from their point of concentration on the weak fronts 10, 11, 12, drove him back with considerable loss, till supported by General Gore, who had followed his movements along the rampart with other 200 men, and had taken post in bastion 7.

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* "It was a serious fault thus at once to have disposed of our reserves. The truth is, we all ran to the point which we

The repulse of Colonel Carleton's force was only just effected by the garrison, when their exertions were called to repel an attack on front 9, 10. This was the column under Lieutenant Colonel Morrice, which having found no obstacle to their approach, except a cunette in the ice about sixteen feet wide, through which they had readily scrambled,* had now reached the glacis. On attempting to lower themselves down the counterscarp they were discovered

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believed most in danger, and in consequence no one remained to oppose any further effort of an enemy."—*Relation of Colonel Le Grand.*

* "In consequence of permission given to the mills to work, which could only be during the falling tide or at low water, the depth of water in the cunette in the ditches had been reduced to less than two feet, and the cunettes were in reality no obstacle to the approach of an enemy."—*Relation of Colonel Le Grand.*

from the ramparts, and the front being well manned and every thing prepared for resistance, such a heavy fire was poured upon them, that destruction seemed inevitable; nevertheless the men descended into the ditch, and attempted to rear the ladders against the scarp-wall, but after the failure of several gallant efforts, and the loss of nearly 200 men and officers killed and wounded, the senior officer effective ordered the remainder to withdraw out of the ditch, and formed them beyond the glacis.

The Guards under Lord Proby, from the Antwerp road, marched round the salient angle of the lunette 16 of the entrenched camp, and reached the broad wet ditch of the unrevêted fronts 2, 3, 4 undiscovered; but after some time spent in vain endeavours to pass over the ditch finding that the tide affected the ice so as to prevent its bearing their weight, they were under the necessity of changing their point of attack; which they did by edging away to their right till they came to that part of the ditch in rear of the retrenched camp, where a batardeau prevents the tide acting, except by means of the sluices. At that spot the ice was consequently firm, and the ladders being reared against the demi-revêtement of the Orange bastion about 17 feet in height, the men entered the place without other resistance than a slight musketry fire from some of the posts overpowered by Colonel Carleton's detachment, which, after he had passed, finding all quiet had resumed their arms.

General Cooke entered the place with this column; as did the commanding officers of artillery and engineers, Lieutenant Colonels Sir G. Wood and Smyth.

In consequence of the delay occasioned by Lord Proby having been obliged to change his point of attack as above narrated, it was half-past eleven, by the regulated time before this achievement was accomplished;* and General Cooke, concluding from the French posts being at that hour in quiet possession of the defences, that the other columns had not yet entered, formed the guards on the rampart, occupying also some houses in their front, and the bastions on the right and left of the ladders by which they had escaladed; and which, remaining elevated against the scarp-wall, assured the means of constant and ready communication with the exterior. That effected, he sent a strong patrol towards the harbour to gain intelligence of General Skerret's column,† and a detachment of 300 men under Colonel Clifton to force open the Antwerp gate, and facilitate the entry of the column ordered to escalade the fronts 8 and 9.

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* General Cooke's Despatch.

† This is another strong instance of the good effect which might arise, where separate columns of attack are employed on

Colonel Clifton with his detachment, having surprized the French guard, reached the Antwerp gate without loss; and after some strenuous endeavours to force it open, rendered ineffectual from want of means or implements, charged a body of the garrison which were firing on his party from the street of Antwerp: General Gore's detachment from bastion 7 joined in the charge, and the assailants had already captured a field-piece, and were on the point of penetrating to the place of arms, when the French reserves advanced in a body and completely overpowered them. General Gore, Colonels Clifton and Macdonald, and many officers and men were killed, and the remainder made prisoners.

A second detachment, under Lieutenant Colonel Rooke, pushed forward with the same view, forced its way to the Antwerp gate; but finding the gate closed, and the lunette in its front occupied, "which being considered to command the bridge, and effectually render the

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the same enterprise at night, to furnish each with its peculiar signal, either blue-lights, rockets, or parachutes, as a means to communicate its success, or failure, to the other columns.

outlet useless,"* no attempt was made to force open the gate, but the party fell back with some loss.

About this time the remnant of Lieutenant Colonel Morrice's column, (except a party of 150 left to remove the wounded,) having marched round the foot of the glacis, entered the place by the ladders of Lord Proby's column, and formed on the rampart to the left of the Guards.

General Cooke being still very imperfectly acquainted with the events which had occurred, and with the positions of the other assaulting columns; and finding that every detachment he sent out was either cut off or beaten back with loss, decided on this augmentation of his force to keep it together in a body, so as to maintain a position on the Orange and adjacent bastions, which should cover his communication with the exterior by means of the ladders, and admit of reinforcements to any extent being introduced for his support; or till day-light should enable him to ascertain the force and position of the garrison, so as to decide how best to direct his further efforts for their capture. Captain Sir G. Hoste was sent out by the ladders, to communicate these views and intentions to the Commander of the forces.

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* This opinion was evidently formed on a misconception of the nature and intent of outworks; they being invariably so constructed as to afford no cover against the fire of the place. Had the party taken with them a petard or case of powder, and blown open the gate, the French guard in the lunette would have been completely at their mercy. It does not, however, appear from the subsequent transactions, that forcing open the gate would have been of any utility, as Colonel Morrice's column entered by the ladders, and the communication with the exterior was by the same means kept free throughout the night.

The respective situations of the two parties, about one o'clock on the morning of the 9th, were as follows.

The weather clear and bright, but extremely cold.

Assailants.

1, At the Waterport gate	600
2, Detachment in bastions 14, 15, under General Skerret	120
3, General Cooke's column at the Orange bastion, deducting the detachment prisoners, and other losses	650
4, Column which had failed to escalade bastion 9, one wing of the 55th being left to remove wounded, and deducting losses during the attempt to assault	900
	2270

Formed on the ramparts, and only waiting for day-light to follow up and complete their brilliant achievements; but being spread over twelve of the sixteen fronts of the place, and in three separate bodies, the strongest of which only mustered 1,550 men, and in perfect ignorance of all the localities.

Garrison.

About the same number of men as the assailants, in momentary expectation of being overpowered; but formed so as to support each other principally en masse, on the place of arms in the centre of the town, or on the fronts 9, 10, 11, 12, and having a perfect knowledge of all the communications, and of every thing around them favourable to their defence.*

In this state of things, the capture of the place was deemed so inevitable by the assailants, that a brigade of German troops, which on hearing the firing had advanced from Tholen, countermarched, the detachment which had made the false attack returned to its cantonments, the commanding officers of artillery and engineers withdrew, and the principal guide, who had proposed the enterprise and conducted the columns, even carried his confidence so far as to return to his house in the town, and retire to bed.

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* Colonel Le Grand, who had every motive of vanity and nationality for calculating the force of the garrison at the lowest amount possible, states the number of men under arms at the commencement of the assault to have been 2,700: they may, therefore, be supposed at this period to have been 2,400 or 2,500 men.

Nevertheless, the night being bitterly cold, the troops, after remaining for two or three hours in the same positions, became weary and impatient: that daring courage which bade defiance to open danger, and was equal to triumph over every human foe, chilled under the influence of cold, inaction, and suspense; and with some few, despondency and distrust succeeded to animation and confidence.

The garrison on the contrary, during this long interval of quiet, had in some measure recovered from their first feelings of surprise, and being well acquainted with every locality, were able before the dawn of day to feel their way. They first patrolled towards the mouth of the harbour along the berm of the demi-revêtement of bastions 13, 14, 15, and then on other points, till having fully ascertained the separation of the assailants, they decided to commence the offensive, with their whole force, on the first dawn of day.

In pursuance of this plan, about 6 A.M. on the 9th, they commenced with General Skerret's small party in bastion 14; and which, "left to their own resources, defended themselves with a degree of intelligence and obstinacy of which history offers few examples."* Being attacked by four times their number with field-pieces, they continued to shelter themselves behind their log retrenchments, and give battle with the heavy guns of the place, till a party of French, directed along the berm, mounted the parapet of the faces of the bastion, and unexpectedly falling on their rear, diverted their efforts and caused them to be overpowered.

The garrison next directed their main strength against the 600 men formed near the Waterport gate, and poured such a fire upon them from the ramparts of 15, the arsenal, and surrounding buildings, as to drive the men for shelter through the gate-way. In that situation, finding themselves immediately under view of a whole front, it was decided to withdraw; but no officer being sufficiently acquainted with the details of fortification, to point out the sure retreat which the covered-way of fronts 2, 3, 4 presented to their view, they crowded into the caponière of communication to fort d'Eau, the guns of which work immediately opened upon them. The successful party soon afterwards manned the guns of the main rampart; when the retiring force, finding themselves shut in between two fires, laid down their arms.

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* Words of Colonel Le Grand's Relation.

General Cooke, on learning there was a serious affair near the Waterport gate, was induced to detach a battalion along the rampart to take part in the struggle. This battalion, on approaching the spot, finding the gate-way in possession of the garrison, the English detachment prisoners, and a strong body of French preparing to advance against them, mounted on the parapet, and from thence descending the exterior slope of the unrevêted fronts 2, 3, 4, quitted the place by crossing the broad ditch of those fronts on the ice, losing, however, several men who broke through and were drowned.

The French having now cleared the ramparts of all the assailants except the force under General Cooke on the Orange bastion, (reduced by casualties, and detaching a battalion, to 1,000 or 1,200 men,) united all their strength in a combined movement against that point. The column from the Waterport gate formed in bastion 5 to attack their left flank, whilst another column should attack their right, and the remainder of the garrison direct a fire of artillery and musketry on their front. The column from No. 5 advanced in gallant style, and penetrated to the point A, where they were met by so warm a fire of musketry and of the artillery of the bastion, that they dispersed and were driven back with loss into No. 5 bastion: at this time, the French column from the right opened a fire both of musketry and field-artillery, seconded by an equally galling fire of musketry and heavy guns from various points of the rampart, and of tirailleurs from every spot which afforded cover in their front.* The troops stood firm, and replied to this galling fire with much coolness from the rampart and the houses in its front, till General Cooke, finding that he was losing many men with little chance of ultimately maintaining his post determined on the suggestion of the officer commanding the party, to let the troops withdraw by the ladders; which they commenced with the utmost coolness and regularity.

During this operation the French, with the view of cutting off the communication with the exterior, possessed themselves of various points flanking the wall against which the ladders were reared, and opened a fire of grape from the flank guns on the men descending the ladders. They were, however, speedily dislodged by a gallant charge with the bayonet by Majors Muttlebury and Hogg of the 55th, and the evacuation of the place by the ladders continued steadily in progress, when a summons to surrender was received from General Bizanet, accompanied by an officer who had been made prisoner in the night. General Cooke learnt from this unimpeachable source the surrender of the troops at the Waterport gate, the loss of Colonel Clifton's and General Skerret's detachments, and the fall of Brigadier General Gore and Lieutenant Colonel Carleton; and also, that the French had brought up and placed combustibles to burn the houses occupied as advanced posts by his column. This disastrous intelligence made him feel that a longer continuance of the struggle, situated as he was without any immediate prospect of being reinforced, would be an useless expenditure of life; and, in consequence, he assented to the mortifying conditions of surrendering himself and troops prisoners of war.

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* "We did not fire during the whole night a single musket from the houses, for this simple reason, that we never occupied any; and it was this forbearance which caused our strength. It is, however, probable that the Guards during the darkness mistook a firing from the ramparts behind the houses for a firing from within the houses."—*Note to Relation par le Chevalier Le Grand.*

In this protracted defence the garrison had 460 killed or wounded, and being reduced to little more than 2,200 effectives, delivered up by a convention next morning 1,800 British prisoners.

Notwithstanding this ultimate failure, it is impossible to read the foregoing narrative without admitting the utmost ability to have been displayed by the officers, and the most spirited conduct and determined bravery to have been evinced by the troops in following up the plans of their commander; which, thus supported, were so far successful as to establish a hostile force in superior numbers to the garrison on the ramparts of the town: nor can we but admire the steady discipline, and excellent order, so long maintained by the assailants in that trying situation during the obscurity of night, and whilst surrounded by the almost irresistible temptations of plunder and liquor.

Such daring conduct, combined with such discipline, creates a high feeling of respect for the British soldiery, and a full conviction that, with such instruments, the attempt to surprise Bergen-op-Zoom was both feasible and judicious, under the circumstances of the moment; and it must ever be a subject of regret, that too divided a plan of operations, coupled with some minor errors of execution and arrangement, should have converted early triumph into ultimate defeat, and snatched a splendid and well-merited prize from the grasp of Lord Lynedoch.

NOTES

TO

THE SECOND VOLUME.

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NOTE 28.

The number of men necessary to carry on a siege with vigour, is founded on principles, always remaining the same; but varying in certain contingencies of which the commander of the army is alone capable of judging. He has first to decide how many reliefs the troops shall have, that is the proportion of rest to duty, and also the number of his troops which he deems equal to cope with the garrison; and then the detail follows as matter of course. The following seems the minimum of the calculation.

Guard of the trenches, three-fourths of the strength of the garrison. This duty may be taken for a short service with three reliefs. The workmen, however, cannot do with less than four reliefs. Their numbers depend upon the trace of the work to be attacked; but, for the sake of calculation, let the operation against a common front of 180 toises with a ravelin be assumed. Then the length of the first parallel, and one line of approach to it, which should always be opened on the night of breaking ground, measures 3,800 yards; which, at four feet apart, require 2,850 men to line them, and that number will, consequently, be the strength of the first night's working-party. The second night the same number of workmen will be required; and what with the service of the artillery and the transport of materials, but small deduction can be made from their strength till the completion of the second parallel. For the remainder of the siege much fewer will suffice; therefore, by arrangement and a little extra-fatigue on the first days of the attack, the working-parties may be averaged at one-third less than the party of the first night, or in round numbers 2,000 men.

For regimental and camp duties, pickets, escorts with stores and provisions, &c., the proportion of the army required will vary according to the hostility of the people in whose country the siege is carried on, and it is one of the contingencies to be regulated by the general commanding; but being fixed, their reliefs must be equally regular with the others. For the sake of calculation, it shall here be stated at one-tenth of the whole army.

On these data, the amount of an army required for the vigorous siege of a place with a garrison of 5,000 men would be,

Guard of the trenches 3,750, at three reliefs,	11,250
Working-parties 2,000, at four reliefs, . .	8,000
	19,250
Duties of the army one-tenth, at four reliefs,	7,700
Total, independent of sick and casualties,	26,950

From this calculation, it is evident, cæteris paribus, that the more numerous the garrison, the smaller the besieging army need be in proportion to it; for the attack of a similar front or fronts of fortification is little different, if the place contain a garrison of 5 or a garrison of 10,000 men; the guards of the trenches and the other duties increase proportionately, but the work does not.

The calculation for the attack of a garrison of 10,000 men would be,

Guard of the trenches 7,500, at three reliefs,	22,500
Working-parties 2,000 men, at four reliefs, .	8,000
	30,500
Duties of the army one-tenth, at four reliefs,	12,200
Total, independent of sick and casualties,	42,700

The former being nearly in the proportion of 5 to 1, and the latter of 4 to 1. Hence it is that the most celebrated commanders and best engineers are agreed as a general principle, that the besieging army should vary in its proportion to the strength of the garrison according to the numbers of the garrison; and as an approximation have fixed that proportion at 5 to 1 when the garrison consists of 15,000 men, 6 to 1 when of 10,000 men, 7 to 1 when of 5,000, 8 to 1 when of 3,000, and in still greater proportion when it consists of a less number.

If there be any cavalry in the place, the guard of the trenches requires to be supported by a number of cavalry equal to the total of that arm in the garrison, with a reserve of one-half more posted at the mouth of the trenches; for as cavalry act invariably on the flanks of the trenches, the cavalry guard on each flank ought to be prepared to oppose all the cavalry in the garrison; and by such an arrangement, this will be the case, the body of one-half held in reserve being in a situation to support either flank, and make it of equal strength with the whole number in the garrison. The sortie of the 19th March, 1812, from Badajos, is a remarkable instance of how much a few cavalry may effect if not opposed by cavalry; forty or fifty men, on that day, having carried confusion into the very depôts of the artillery and engineers, and made officers prisoners at nearly 2,000 yards from the place.

These calculations do not apply to peninsula-fortresses on a restricted front; but in all open situations, an army formed on the above calculation would, at the end of a siege of a month's duration, be greatly fatigued.

It is not, however, intended to convey the impression, that a siege should never be undertaken unless with a force thus proportionably greater than the garrison; but merely to point out where choice exists the best rule of proceeding. All general rules must occasionally be deviated from; genius will sometimes supply the place of numbers, and necessity oblige where calculation condemns.

Thus, in consequence of the superior strength of the French in the field, and the immediate vicinity of their principal armies, which required strong detachments to watch, and an efficient corps to parry their hostile movements, the Duke of Wellington, in 1812, could only allot 12,000 men (increased to 16,000 on the day of the assault) for the siege of Badajos, garrisoned by 5,000 men, and, nevertheless, breached and carried the place by assault in an unusually short period; and again, at the siege of St. Sebastian, in the following year, (a peninsula-fortress,) 11,000 men triumphed over 3,400.

NOTE 29.

THE number of pieces of ordnance required for the attack of a fortress has not so much reference to the number of pieces mounted on its ramparts, as to the construction of the works themselves which they are intended to defend; for the besiegers never willingly oppose artillery by a direct fire, but generally contrive, by a skilful disposition of their trenches and batteries, to render one piece of ordnance in the attack superior to several in the place.

Thus, for instance, three guns firing à ricochet from any convenient point (not being a greater range than 600 yards) on the prolongation of a face or other line without traverses, will dismount any number of guns, say ten or twelve, which may be mounted upon it; or if the line be traversed, they only require the aid of shells from two or three mortars to ensure the same effect, and such a position for the besiegers' batteries may be found on the prolongation of most of the lines of ordinary works.

There will, however, be in all irregular, mountain, and maritime fortresses, many faces against which an enfilade fire cannot be made available; such as portions of works formed with a considerable curve, or where, by a skilful disposition of the defensive lines, their prolongations are made to fall on situations where batteries cannot be erected, as a hollow, an inundation, a river, the sea, or that they are made to intersect other portions of the work which cover and conceal their ramparts; or where the works stand on very great elevations, or are naturally shouldered in by higher ground on their immediate flanks. In these cases the ordnance of the place must be silenced by direct fire from the besiegers' trenches, and such fire, to be effectual, ought at least to be equal in weight and quantity to that it is intended to silence.

A battery, thus firing from the trenches, has this advantage over the batteries of the place, that its undivided attention can be given to one object; whereas, the defensive ordnance must occasionally be diverted to efforts to arrest the progress of the works of the attack. Therefore, gun for gun, and mortar for mortar, the besiegers would generally succeed in overpowering the fire of a place; but where ordnance can be procured, double the amount of that to be silenced by direct fire should be brought into the trenches, which would effect the object in far less than half the time.

In future sieges, the recently invented 10 and 8-inch howitzers of Monsieur Paixham and General Millar will, without doubt, be the principal weapons for enfilade fire, and will tear up every thing opposed to them; but where guns continue to be used, the 18-pounders will be found handy and efficient.

For direct fire or breaching no gun of less calibre than a 24-pounder should be used.

Therefore, to carry on the attack of any place, however fortified with speed and little loss, there should be provided to be put in battery, immediately after breaking ground, an equal, or if possible, double the number of guns to those in the place which it may be found necessary to oppose by direct fire; and from three to five 18-pounders or heavy howitzers for every line bearing on the attack subject to be enfiladed. Five pieces to be used against the principal faces and longest lines, and three against the shorter lines. To render their fire effectual, however, it is *absolutely necessary*, that two or three 8 or 10-inch mortars should be planted in each of the principal batteries to destroy the defensive traverses, and search into such parts of the enfiladed line as may be sheltered from the ricochet of guns.

If there be a covered-way, two or three of the heaviest nature of howitzers in addition to the above will be required to sweep each of its faces, when the approaches arrive at 150 or 160 yards from their salients; and three or four pierriers or mortars, charged with small balls, to overwhelm the defenders of each of the re-entering places of arms, when the approaches arrive at 60 or 70 yards from the covered-way.

Such a provision of ordnance will serve to gain possession of the covered-way of any ordinary fortress; but, for the further prosecution of the attack from that point, other fifty pieces of ordnance, firing with the full charge, should be provided.

The detail of the natures of ordnance at future sieges will differ greatly from that laid down by theoretical writers on the attack and defence of places, who invariably calculate and reason on the effect of ordnance as being the same as in the time of Vauban; whereas, the powers of each calibre of gun and howitzer has doubled in force since that period, and such is now the accuracy of their shooting, that the fire of the first batteries might be rendered serviceable (if required) till the passage of the ditch.—See NOTE 17.

Again, the recent improvements in the 8 and 10-inch howitzers, having increased their range and rendered their shooting accurate, they will naturally in future sieges be made to supplant most of the guns hitherto used for enfilading, and will be the means of clearing the covered-ways and re-entering places of arms, with far less aid from advanced batteries than hitherto effected.

The practice with small mortars has also become so correct, that they might be used with the greatest effect as temporary expedients, and would in many cases obviate the necessity for bringing up more unwieldy machines.*

Spherical case will also naturally be substituted for musketry in many situations, and will prove of essential service.

The exact number of pieces of ordnance required for the reduction of a fortress can only be correctly ascertained by the joint labours of the heads of the artillery and engineers' service, after the plan of the attack shall have been decided; but, as some approximation is necessary for the previous outfit, it may be stated, that the smallest number of pieces, which any calculation will admit for the reduction of a front with a ravelin, is 60 guns, 20 howitzers, 22 mortars, and 16 pierriers; and that to carry on the attack with due convenience and vigour, there should be a battering train composed as follows:—

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* The author saw the Prussians firing from their trenches before Maubeuge from mortars of 4⅖ inches, on the morning after breaking ground. The mortars were placed on the bottom of the trench (a firm gravel) without platforms, and were throwing a succession of shells with apparent good effect into an advanced lunette, from which a musket shot only was occasionally returned. There can be no doubt, that portable mortars used in such manner would prove highly serviceable at various points of an attack, and it is strongly recommended that they should form part of every battering train.

24-pounders	40
18-pounders or heavy howitzers . . .	80
Mortars of 8-inch and upwards *with shells*	30
Do. do. used as pierriers	16

With respect to the comparative magnitude of the latter proportion, it is to be observed, that on almost every service during the late wars, but more particularly in the Peninsula, the supplies of siege ordnance and ammunition sent from England were far too scanty. It will be seen by the Journals, that in Spain, even to make up the inadequate ordnance used, battering guns of lighter weight and inferior quality to our own were obliged to be picked up at Lisbon, or borrowed from the navy,—that proportions for garrison service were substituted for siege service, and that some of the natures of ordnance were worse than useless.—See NOTE 26.

These disproportionate and ill-arranged supplies were caused by the details of sieges having been little considered in England; but of late years the subject has been so much discussed, and is now so generally understood, that, without doubt, in future wars a due proportion of guns and ammunition will be as freely given as other supplies.

In furtherance of very ample proportions being sent, it may be observed, that half a dozen pieces of ordnance of any or every nature too much with an expedition, would only create the additional charge of embarking them; as in every fleet there are many light troop and store ships which would gladly receive them as ballast, and if not wanted in the operation, they might remain on board and be brought back without cost by similar conveyance.

Considerations on the Quantity of Ammunition required for a Siege.

As the enfilading batteries must continue open till the approaches arrive at the crest of the glacis, and the mortar batteries during the whole period of the attack, the ammunition of those natures, necessary for a siege of a given duration, depends in great measure on the number of rounds fired from each piece in a given time.

At the commencement of a siege, the enfilading and mortar batteries should fire to produce their utmost effect; but after twenty-four or thirty-six hours severe firing, the traverses will be demolished, the platforms broken, and the artillery on the ramparts disabled; after which, only such fire need be maintained as will prevent working parties of the garrison repairing the injuries sustained, or bringing up fresh ordnance. For this purpose, great precision, and an equal fire day and night, will be required, and each piece should fire a regulated number of rounds per hour. As the effect of each shot must be watched, the charge accurately apportioned, and the utmost attention paid that the piece be duly regulated each time; and further, as there is much merit and real utility in expending no more ammunition than is absolutely necessary to effect an object, it would, perhaps, be better that the fire à ricochet were limited to 100 rounds in the twenty-four hours.

The mortars in battery might probably be used to advantage to the extent of 120 rounds per day throughout the siege.

Batteries to breach, fire as quickly as they can with precision, which may now be estimated at 25 or 30 rounds per hour; but as such rate of firing injures the guns, and further, is little likely to be maintained where opposed by musketry, the average proportion for breaching may be stated at 20 rounds per hour, for the period of day-light.

On these data, the precise quantity of ammunition of every nature required for the reduction of any place may be calculated as soon as the plan of the attack has been laid down; but as that cannot be fully decided till after the investment, some approximation to the calculation is required for the previous outfit.

For the attack of an ordinary front, it will be found sufficiently accurate to provide 60 rounds of shot per gun, and 60 shells per mortar, on the full proportion of ordnance, stated in the former part of this Note, for each day the attack is calculated to last, or 1,200 rounds per gun and mortar, independent of shells for the howitzers, for a siege of twenty days.

Assuming the foregoing battering train as the standard of calculation, it will naturally be understood that as a train composed of fewer pieces of ordnance will have each piece, on the aggregate, a longer time in battery, the supply of ammunition for such inferior numbers must be proportionally greater than 60 rounds per gun and mortar.

For each pierrier there should be provided 400 rounds of half-pound and one-pound balls; and also a considerable proportion of case and grape shot for all the natures of ordnance, and at least 15,000 hand-grenades. Nor should carcasses, light-balls, and rockets be spared—each will under certain circumstances prove highly serviceable. The large rockets would form batteries for many purposes, which would not wait the delay of getting up ordnance, and on points where space could not be obtained for the working of guns; and would further be tremendous weapons to sweep along a ditch, or amongst bodies of men in confined situations.

The number and proportions of the shot being fixed, a few barrels of powder extra, will ensure a provision for firing with the full charge or à ricochet, as they may happen to vary.

One thousand barrels of powder above the artillery demand should always be provided for engineers' services, with a quantity of slow match, portfires, &c.

The proportions above given may appear somewhat large to an English officer accustomed to the very scanty supplies furnished for the siege equipments during the late wars, but no commander, about to undertake a siege, should be satisfied with less; for it is a fact which cannot be too much considered, that the more ample the provision of ordnance, ammunition, and materials, so much sooner will a place fall, and so much less will be the loss of the besiegers.

As an instance of the very parsimonious and inadequate manner in which battering trains were furnished with ammunition during the last war, the following details of the equipment sent for the reduction of Copenhagen, a place sufficiently fortified to have resisted three or four weeks, are added.

BATTERING TRAIN.

			No. of Pieces.	Rounds of Ammunition supplied for each piece.
HEAVY IRON ORDNANCE.				
Guns,	24-pounders . . .		20	950
Carronades,	68-pounders . . .		6	166⅔*
Mortars,	Land Service,	13-in.	6	400
		10-in.	16	500
		8-in.	8	500
	Sea Service,	10-in.	6	no ammunition
BRASS SIEGE ORDNANCE.				
Howitzers,	10-inch		5	do.
	8-inch		12	300
	5½-inch,	heavy,	16	285
		light,	6	600
Mortars,	10-inch		12	no ammunition
	8-inch		12	do.
	5½-inch		10	500
Total pieces of heavy ordnance,			135	

being an average quantity of 370 rounds of ammunition per piece, great and small included.

The proportion for Flushing is detailed in Note 45, where it will be read with astonishment, that to reduce forts Bathz and Lillo and Antwerp, and destroy thirteen sail of the line, and one or two hundred smaller armed vessels, the number of heavy guns sent with the army only amounted to twelve 24-pounders with 600 rounds of ammunition each, and two 68-pounder carronades with 300 rounds of ammunition each, whereas, our allies, to reduce the maritime fortress of Dantzic in 1813, demanded—

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* Being altogether 1,000 round shot.

24-pounders	100
12-pounders	20
Howitzers	18
Mortars	66
68-pounder carronades	10

and were actually supplied in addition to their own battering train with

Ordnance,	Iron	Guns	24-pounders	50
			12-pounders	10
		Mortars	13-inch	2
			10-inch	16
			8-inch	10
		Carronades	68-pounders	4
	Brass	Howitzers	10-inch	4
			8-inch	8
		Mortars	5½-inch	12
			Total	116

and the following proportion of ammunition:

Shot,	Round	24-pounder	115,500
		12-pounder	15,000
		68-pounder carronade	480
		Pound shot	6,200
	Case	24-pounder	1,500
		12-pounder	300
		8-inch howitzer	480
		68-pounder carronade	24
	Grape	24-pounder	1,500
		12-pounder	300
		68-pounder carronade	24

Shells, common, empty	13-inch	1,980
	10-inch	22,200
	8-inch	20,112
	5½-inch	15,900
	4⅖-inch	308
Carcasses, round, fixed	13-inch	120
	10-inch	1,200
	8-inch	1,080
	5½-inch	1,000
Powder, whole barrels	L. G.	13,058

Mem.—The whole train demanded was embarked, but only one division left the Thames.

NOTE 30.

Next to a sufficiency of artillery and ammunition, an abundant supply of materials and stores will be found the most important aid, in reducing a place with certainty and little loss. Such abundance will facilitate the advance of the approaches, and save the lives of the troops at every step.

Indeed, there is nothing more certain than that the reduction of a fortress must be paid for in materials or men, and that to save the one the other must be freely sacrificed.

The cause of fortified places invariably falling under the attack of an enemy arises conjointly from the superior fire the besiegers are able to bring against it, the unlimited quantity of materials they can expend, and the power they have of opposing, on every point, a superior force to that of the garrison.

In a town of the utmost magnitude every supply is limited; gun after gun, and platform after platform may be replaced, fresh materials may long be found to repair every casualty, and even fresh men may for some time be forthcoming to relieve those disabled; but finite means must diminish by use—the largest magazines will be ultimately expended, each succeeding day of a siege empties them in a twofold proportion, and nothing can be procured from without to replenish them; till at length, after a certain period of resistance, the garrison find all their resources exhausted, whilst the power of the attack is hourly augmenting, and only save their lives by means of a capitulation.

In the two preceding notes, the quantity of artillery, and the number of men necessary to this due superiority of force, has been discussed.

The quantity of materials required for any given nature of operation may in like manner be calculated with the utmost exactness, as soon as the plan of the attack has been laid down. The mass of gabions and fascines, by a measurement of all the lines of the trenches from the second parallel inclusive; the breadth of the ditch, the front and height of the cavaliers of the trenches, the numbers and extent of the several lodgments, &c. &c. &c.

After making the calculation with accuracy, it will be necessary to add one half to the amount, as very considerable numbers of both fascines and gabions will be destroyed in the carriage, whole rows must occasionally be replaced, and many uses will be found for them in the progress of the work, which cannot be anticipated.

Next come the materials for the batteries, the gabions and fascines for the cheeks of the embrazures, the sand-bags for their interior revêtements and traverses. Then sand-bags to cover the riflemen, &c. &c.; and to these quantities a very large addition must be made, as sand-bags are a reserve store of incalculable value, and the main stay of most English operations.—See pp. 193 and 194.

In similar manner the quantity of scantling and plank required for the galleries of mines, platforms, splinter-proofs, &c. should be calculated, and a very large addition made to the amount for unavoidable accidents and unforeseen labours.

The entrenching tools should be, at least, in the proportion of three to one of the strength of the most numerous working party likely to be employed.

Pick-axes and shovels cost little originally, and are not necessarily expended by use like shot or shells: one hour's firing from the batteries at a siege costs more to a state than the value of all the entrenching tools with an army.

It will be seen by the Journals, that owing to a deficiency of means of transport and other irremediable obstacles, the supplies of tools and stores in Spain were altogether too small, and prevented many operations being carried on which were considered desirable; and further, created innumerable difficulties and delays in performing the work which was completed. Those supplies must not, therefore, be considered any criterion of the quantities which ought to be brought up. Indeed, recent experience furnishes no data on which to form a correct idea of the quantity of materials and stores likely to be expended during a siege: but the reader is referred to the excellent memoranda published by Cormontaigne, and other practical writers, of the expenditure during the olden times of sieges; and he will there see, instead of the miserable quantities detailed in these pages, 30,000 entrenching tools, 200,000 sand-bags, 278,000 sacks of wool, 50,000 hand-grenades, 300,000 fascines, 80,000 gabions, and other similar quantities of stores and materials, brought up and expended at most of the attacks.

Whatever be the quantity of stores, or however great the mass of materials found to be required on a calculation of the details of the several works of a siege, they should all be on the spot previously to breaking ground, or their arrival be assured at given periods of the attack. Delay, loss of life, and disaster are the infallible consequences of any irregularity in the receipt of materials during a siege, as has been explained in Note 10.

With respect to the officers and men required for the engineer's service at a siege, the following is submitted as a fair proportion for carrying on the duties with vigour.

Officers for the General Duties of the Siege.

Commanding engineer, three staff, two directors, ten brigades of one captain and two subalterns each.

The directors to be field officers; and as the senior staff officer generally acts as major des tranchées, that is, all arrangements of detail are made through him, it is desirable he should also be of field rank.

The other officers to be either first or second captains, or first or second lieutenants, as may be convenient.

Men for the General Duties.

One company of sappers, on the war establishment, distributed in the proportion of ten to each brigade of officers. The officers of this company to take the general duties of the trenches as one of the ten brigades.

The above numbers will admit of three brigades of officers and men being constantly on duty in the trenches, with one brigade spare for extra or distant services, and to replace casualties.

Sappers working as such.

Four companies on the war establishment, so as to furnish twelve brigades of eight men each company, making forty-eight brigades altogether; which, at four reliefs, would give twelve brigades or one company (being in round numbers 100 sappers) constantly working in the trenches. The officers of these companies to go on duty and come off duty in the trenches with the men so as also to have four reliefs.

Miners.

One company of seventy or eighty men, or a detachment of a similar number, but more strongly officered in proportion, would generally be sufficient; but should the place about to be attacked be countermined, two companies of miners must be formed. The officers of these companies or detachments to be employed on the same duties with the men.

Artificers.

One company of artificers, or a detachment of the strength of 100 carpenters, sawyers, and smiths, embodied from the sappers for the period of the siege, or obtained from the troops. These men to prepare and lay the platforms, frame the supports for the mines, repair tools, and superintend the making of fascines and gabions, mantlets, &c. &c. by a separate roster.

The officers of this body of artificers, when composed of detachments from the troops, to take the general duties of the trenches as assistant engineers.

Commissaries of Stores.

Two of senior rank, six of junior rank. The former to have charge of the park by alternate reliefs; the latter to go on duty at three reliefs, and have charge of the stores, tools and materials, going from the park to the entrepôt or trenches, and returning from thence to the park.

The commissariat will require three reliefs of four men each to be permanently attached to them for the whole period of the siege.

These men might be selected from the non-commissioned officers and spare men of the companies of sappers or the artificers, and be aided in their duties as the service required it by soldiers of the line from each relief of the working party.

The sappers, miners, and artificers, when not required to work at their respective trades or occupations, to be employed by regular reliefs on the general labours of the trenches, which would be found to facilitate the construction of the batteries, magazines, &c. &c., and much diminish the number of the troops necessary to form the working parties.

Summary of the Engineer's Establishment for a moderate Siege.

	Commanding Engineer.	Staff.	Directors.	Captains.	Subalterns.	Commissaries.		Companies of Men.	Companies of Artificers.
						Senior	Junior		
General duties .	1	3	2	10	20	. .	. .	1	. .
Sappers	. .	. .	. .	4	8	. .	. .	4	. .
Miners	. .	. .	. .	2	6	. .	. .	2	. .
Park	. .	. .	. .	. .	. .	2	6	. .	. .
Artificers . . .	. .	. .	. .	1	2	. .	. .	. .	1
Total . .	1	3	2	17	36	2	6	7	1

If the attack of a fortress be attended with local difficulties, or divided into distinct operations, the above numbers of both officers and men must be very considerably augmented to ensure due efficiency.

NOTE 31.

THE following intercepted letter in cypher, from the Governor of Pamplona to Marshal Soult, bears honorable testimony to the vigilance and activity of the blockaders.

206.74=8096=1813=43=
10.45.23.21.16.2.41.25=5.24=10.4.25.24.3.9.8.5.=55=
53.45.41.7=10.19.23.49.2.51.28.21 = 47.46.=17.9.2.31.22.
5=13ls,6.29.62.7 = 18.56=77=110=34=23=59.29.26 =
21.45.10.96.44.21÷8÷69.51.28.17.56.26=47.2. =40.19.14.
28=47.24,40.52.20 = 5.2=74.64.13,46=10.59.62.7= 3„45.
46.38.22.28.15 = 43 = 8=27.51.41.54.44 =25.16.30„46.50.

29.57 = 34 = 44.53 = 35.19.14.21.4.28.15 = 44.28.17.59.57.
56 = 47.50.7 = 48,2.13.29.3„27.16:51.28.51.46.7=6„45.29.
31.59.23.20 = 4.5,18,24,57=62.41.21.37.46.8.29=74 =102
= 55=14.50.=63„44.38.19.52=10.2.36.24 = 36 45 53=40.
59.7.20,52,11„5.24=6„51.29.48÷22.18.58.50.38 =16.46.21.
37.41.22.29 = 74.64 = 36.8.14.20=16,24,=23.24=40.29.
62.7 = 6„4.20 = 25.50.40.59.28.47.38.44 = 47.22.58.5.24.
25=16.41.26.37 46.19.29=111=98=43=——23.51.29.26
= 8.60.45.53.7 = 41.28 = 40.56.46=13„2=60.14.22.53.47.
24=13„50=1.45.24.41.35„=34 = 46.23=6„2 29=13 44=
31.14.28 = 40.59.29.25 = 5.50.26=9.45.6„52.15.19.41.32=
55 = 47.50.40 = 41.14.26 =58.24=3„51.10.36.44.23.17.24.
10.50.53.27 = 47 46 =11.18.39.17.46.21=28.45.41.20=22.
60.59.53.26=54=45.29.52.51.46.25.7=56.46=40.58,29.21
=47.50=79.86=36.19.58.8.13„2.7=43=——5.2.35„63„24.
3„15.14.35„=13„44=18.4 = 30„8.25,23,16.7.45.28.=50.21.
27=47.56=73 87.66„86.85.78 = 159=34=86.75=65=147
=43=23.45.29.7=20.51.10.36.2.21=24.28.15.51.41.38.44.
26 = 47.56 = 1.4.27.54—50.48.14.2.7 = 34 =5.24.28,53.50.
10.52 = 27.57.19.31.8.16.5.18.56 =15.45 29 14 59 41 38 26
=11=62 18=17 51.46.6.24=58.50.7=3„9.2.36.62.53.21=
43=——28.51.46.20=16.49.53.45.57.59.28.7″4.1„21.51.18.
41.36.50.23.15 = 17.24, = 12.39,52,=26,44,=6.8.21.7.24=
9„51.38.26, = 13„2 = 5,22=60.46.50 =47.44,=18.19.=161
= 43 = ——4.30„25.2.24.33 =10.51.53.7.24,14.49.28,44,46.
57 = 36.59.28 = 6„38,45„43„59.23.13=48.50.21.40.56.17.15
=43=

=105=

PAMPLONA,
28me de Set^re. 1813.

MONSR. LE MARECHAL,

Nous mangions du cheval depuis le 17 Août, et nous sommes a 10 onces de pain depuis le 24 du mois courant:—a toute rigueur et en faisant encore des reductions nous pouvons aller jusqu' au 20 Oct.; je ferai même mon possible pour aller jusqu' au 25,—mais je ne puis pas repondre d'aller jusqu' au 1er Novembre.

Nous avons un peu de viande de bœuf, et un peu de vin pour les hospitaux,—depuis le commencement du blocus nous avons toujours eu plus de 400 malades: l'effectif de la garnison est de 3,600 soldats, et 100 chevaux.—Nous sommes entourés de batteries et l'ennemi travaille toujours; il coupe les chemins—et nous ignorons absolument ce que se passe hors de la vue de la place," &c. &c.—*Baron Cassan.*

This letter, whilst in the hands of the blockading force, was deemed an inexplicable enigma, and sent as such to head-quarters.

The Duke of Wellington, however, being unwilling to lose the benefit of its contents, set himself to work to decypher it, and, with his usual acumen, penetrated the mystery in which it was enveloped.

The letter having been despatched from Pamplona in the evening, he assumed that it would bear the date of the day on which it was sent, and such proving to be the case, supplied some letters of the key. Next, his Grace presumed that the natural politeness of a Frenchman would induce Baron Cassan to address his superior with the style and title of his rank, and this again proving so, further added to the key. Then selecting the monosyllables, and comparing portions decyphered with other portions guessed at, after some hours of patient and laborious consideration, he formed a suppositious key to the cypher, which, subsequently being compared with the true key, differed in little, except in numbers, arbitrarily affixed to men and places.

NOTE 32.

CIRCUMSTANCES so occurred at these sieges, owing to the small quantity of ordnauce and ammunition which could be brought up, that the fire of the place was never subdued; and except at the last siege of Badajos no enfilading batteries were established.

Such bold advances against a fortress, speak highly in favour of the natural intrepidity of the British soldier, but as they tend to protract, rather than accelerate the fall of a place, they should never be resorted to when it is possible to procure a sufficiency of guns and ammunition to dismount the ordnance of the place, and ruin the defences as well as to form a breach. Even with an inadequate proportion of ordnance for both these objects, it would, perhaps, be better, that is, it would tend to shorten the attack if a considerable portion of the fire were directed against the defences.

It would assuredly cause many casualties amongst the garrison, render their fire less active and certain, impede the formation of their retrenchments behind the breach, and cut away most of their defensive obstacles. On the other hand, it would diminish the loss of the besiegers, accelerate the progress of their trenches and batteries, add to the confidence and coolness of the gunners, and save the lives of hundreds during the assault.

In a regular attack, where every point is gained inch by inch, it is impossible to succeed without overpowering the defensive artillery; but even in an irregular or distant attack, adopted from paucity of ordnance, where there are any advanced positions to be gained by labour it would probably tend to shorten the attack, if a considerable portion of the offensive fire were directed against the ordnance of the place. That is, should thirty guns be provided for a siege, and fifteen be used to keep under the fire of the enemy's artillery, and ruin their musketry defences, it would save more time in completing the trenches and throwing up the breaching batteries, than the difference of the period necessary for making a breach with thirty or fifteen guns, in consequence of the increased labour required to throw up passive than to throw up active batteries, (see Note 12,) to say nothing of the advantages mentioned in the former paragraph as accruing to the besiegers from such mode of proceeding.

The following occurrences will serve to show how much a heavy fire is capable of retarding a besieger's operations, and consequently, how desirable it is, when the fire of the place is not kept under, to deceive the garrison as to the situation of the batteries, till the moment of their being prepared to open.

In a particular part of the trenches at Burgos, the soil proving rocky, gabions were used to obtain cover, against which the garrison directed an incessant and heavy fire; nevertheless, at night the gabions were filled and the approach completed.

The next morning, at day-light, the garrison displayed even greater animosity against the gabions than on the preceding day, and concentrating nearly all the fire of the place upon them, knocked them over; and for some hours afterwards kept up such an incessant fire on the spot, that all attempts to blind the communication proved fruitless. Whilst this dire destruction was showering down on the gabions, a battery, No. 2, at twenty yards distant from the spot, revêted with sand-bags, was approaching its completion unnoticed by the garrison. Luckily, it occurred to an officer of engineers, that the garrison might mistake the gabionade for a battery, and he ordered every gabion to be taken down to permit them to have a full view of the interior. That effected they ceased to fire on the spot, and a mere skreen of earth being thrown up in the night, the communication was never again interrupted during the siege. General Dubreton, in his journal of the defence of Burgos, notices this circumstance as follows.

Nuit du 21*me*,—22*me*.

L'ennemi a commencé une batterie, il a exécuté ce travail malgré le feu le plus soutenu du canon et du fusil.

Journée du 23*me*.

Au jour on a apperçu l'exécution d'une batterie; l'artillerie de la place la ruina en peu de tems.

At the same siege, an accidental shot having passed through the parapet of the lodgment in the hornwork of St. Michael and killed a man of the guards, his comrades placed a row of gabions on the top of the parapet with the view of more speedily thickening it. The garrison instantly turned several guns on the spot, and wounded two or three men who were working behind the gabionade. This being reported to the officer, before alluded to, he ordered the gabions to be taken down, and in a few minutes the garrison ceased to fire at the spot.

It is useless to attempt to sap near a place till its artillery fire is subdued; even if only two or three guns could be preserved till the crowning of the crest of the glacis, they would effectually impede that operation. A steady fire of artillery at the distance of even 150 yards, will knock down gabions as fast as sappers can place them: from these causes, to silence the fire of the place, is the principal aim of all the operations of a regular siege, and is the spirit of the mode of attack adopted by Vauban. The following extracts from the journal of the French chief engineer at Ciudad Rodrigo, show the advantage he considered the garrison to derive from their fire not being opposed.

La nuit du 15*me au* 16*me.*

Il paroît que nos bombes, nos obusiers et notre canon lui ont fait beaucoup de mal; ses cheminements de la nuit étoient faits imparfaits.

Le 16*me.*

L'ennemi a continué de battre en brêche sans s'occuper

ce-jour-là ni le précédent, de nos batteries, sur lesquelles il n'a point tiré un seul coup de canon: il est rare de voir un assiegeant négliger a ce point d'eteindre le feu de la place.

Le 17*me.*

L'ennemi a continué de battre en brêche; notre artillerie, parfaitement servie et dirigée, a dû lui faire beaucoup de mal, il a débouché á la sape pleine en dirigeant son travail entre le couvent St. Croix et la place: il a très peu poussé cette sape, il a fini même par l'abandonner, probablement parceque notre feu d'artillerie l'incommodoit beaucoup.

La nuit du 17*me au* 18*me.*

L'ennemi a cessé son feu, le nôtre a redoublé et a été dirigé en grande partie sur le cheminement, que l'ennemi n'a pu pousser en avant que d'environ quinze toises.

NOTE 33.

ALL the attempts made at this attack to overwhelm the artillery of the place were by direct fire; and perhaps with some reason, considering the complete success obtained by that means at Ciudad Rodrigo, and the little effect produced by the fire of the enfilading batteries à ricochet at the reduction of Badajos.

This naturally leads to a consideration of the most efficient employment of ordnance to silence ordnance, and to inquire into the real value of the enfilade fire à

ricochet, which is generally considered as being applicable to all distances, and to be of itself infallible.

This colossal reputation was in all probability first acquired by enfilade fire, from being powerfully and judiciously employed, whilst it surprised by its novelty, and before means could be devised to ward off its effects.

Ricochet shot then bounded freely along whole lines, dismounting the guns, breaking the platforms, and sweeping away the defenders; but sober judgment, and every-day experience, lead to much doubt of an enfilade fire à ricochet possessing any such destructive properties against lines well traversed and defiladed. No shot, fired with only a few ounces of powder, can possibly have sufficient force to penetrate through, or knock down, a moderate obstacle; and, consequently, a ricochet shot can injure troops or guns which are well and closely covered by traverses, only by passing immediately over the crest of a traverse, and falling down almost vertically at its base, which must be a rare chance for a shot fired according to the usual ricochet practice with from six to nine degrees of elevation.

Previously to the sieges in Spain this nature of fire had been utterly neglected in England, and we were obliged to take its character on trust from the continental powers, who, finding the reduced charge most applicable to their brass guns, had an interested motive for vaunting forth its praise. We can now, however, correct our judgment by a course of practice carried on at Woolwich, under Colonels Sir A. Frazer and Dickson, and other practised artillerists, in 1820 and 1821, under very favourable circumstances.

A face of a bastion of fifty toises in length, was armed with six guns mounted on garrison platforms, two in the centre of the face, and two at each extremity of the face; and on the flank of the bastion seen in reverse by the enfilading batteries, other two guns were mounted.

The ordnance employed consisted of 24 and 18-pounder iron guns, 10, 8, and $5\frac{1}{2}$-inch howitzers, and 68-pounder carronades. The face of the work to be enfiladed was on the same level with the enfilading batteries, and the parapet to be cleared eight feet in height. The distance from the battery to the work was accurately measured, and the effect of each round reported, so as to regulate the next discharge.

Twelve hundred and thirty rounds were fired with shells or shot. Of 90 rounds fired from 24 and 18-pounders, at 400 yards distance, with a charge of powder of $\frac{1}{32}$d the weight of the shot, two thirds, or 60 rounds, fell into the work.

At a range of 600 yards, the same guns fired 240 rounds, with charges from $\frac{1}{32}$d to $\frac{1}{20}$th the weight of the shot, out of which number 96 fell into the work, being between a half and one third of the number fired: at the distance of 800 yards, 150 rounds being fired with charges from $\frac{1}{24}$th to $\frac{1}{12}$th the weight of the shot, only 57 fell into the work, being a proportion between one-third and two-fifths.

Of ten rounds of shot fired from 68-pounder carronades at 600 yards distance, with a charge of powder of $\frac{1}{34}$th the weight of the shot, four rounds took effect, and averaged five bounds each.

Of ten rounds of shells fired from the same piece, at the same distance, with one pound eight ounces of powder, six fell into the work, and averaged six bounds each shell.

This course of ricochet practice was commenced with the face of the work destitute of traverses: but after the range had been attained with accuracy, traverses of the rude and primitive construction, usually formed by a garrison on being attacked, were added.

The shot fired before the work was traversed, made from 10 to 27 grazes along the terre-plein, being an average of 13 grazes each shot; but subsequently very few made more than a second bound.

Of 170 shells, filled with powder, fired from the howitzers, after the work was traversed, 58 only bounded along the terre-plein, and of these 58, only 33 burst whilst bounding along the work, in consequence of the fuzes having been cut longer than necessary for the time of flight to admit of their lodging in the traverses previously to exploding. The 33 shells which exploded did much injury to the traverses; but no gun, so protected, was disabled during the course of the practice, though many guns were repeatedly struck, and some disabled, before the traverses were thrown up to cover them.

From this course of practice it may be assumed, that about 400 yards is the best distance for an enfilade fire à ricochet—that such fire is to be preferred to any other, within the distance of 600 yards from the object; but that beyond 600 yards, fully two thirds of the ammunition will be thrown away, and consequently ricochet fire can rarely be an advantageous employment of artillery, where precision is required, at any distance exceeding 600 or 650 yards. In the defence, however, when directed against the approaches and parallels of a besieger spread over an immense space, this nature of fire, from its bounding and grazing, must at all periods of a siege prove of great annoyance to the working parties and guard of the trenches.

Ricochet fire would appear from these experiments to enjoy a reputation in the attack of places beyond its merit; and most probably, from the circumstance that in all regular and well-conducted sieges the enfilade batteries à ricochet are invariably seconded by a powerful fire of mortars on the faces and flanks of works, the artillery of which they are intended to silence; and the end being obtained, a degree of credit is given to the fashionable and favourite fire à ricochet, which ought, in justice, to be largely shared with the mortars, for the late experiments justify the belief, that, without the assistance of heavy vertical fire, an enfilade fire à ricochet cannot be rendered destructive along a face well traversed. Shells are absolutely necessary as pioneers, to level the protecting parapets, and gain scope for the more teazing, though less powerful efforts of the latter, and without their assistance it is almost harmless.

It is not wished to disparage enfilade fire, or to praise direct fire at its expense. Direct fire is certainly irresistible where it can reach; it will cut through stone parapets, ruin embrazures, and destroy masonry defences of every nature; but it will not serve every purpose. There is no exclusive weapon in the science of attack and defence; it is neither vertical, ricochet, nor direct fire alone, but a judicious combination of the three, which will prove irresistible.

Enfilade Fire with Full Charge.

Experience has proved that an enfilade fire with the full charge of powder may be rendered extremely annoying to extensive and general lines of defensive works, and will sweep along them, making many bounds, from distances as great as 1,800 yards. Such batteries at the siege of Gibraltar gave great annoyance to the defenders of the sea-line between the Montagu and King's bastions; and General D'Arcon considered the failure of the Spaniards to maintain this fire with energy on the 13th September, 1782, to have been a principal cause of the defeat of his maritime efforts to breach the latter bastion.

Against single lines, however, such as a face or flank, a shot fired from a distance to require the full charge has little chance of striking the terre-plein with precision, and no chance of making a second bound, where the work is properly traversed. Indeed, it is probable that its force would be generally spent on the traverses, which shells would far more powerfully destroy; besides which, spherical case fired from 24-pounders, at any distance exceeding 600 or 700 yards, to enfilade a moderate line, would be infinitely more destructive to the defenders than round shot.

It would therefore seem that as means of *general* annoyance, where ammunition is abundant, it is desirable to erect enfilading gun batteries wherever practicable within 1,800 yards; but it is repeated that, where means are limited, and it is essential to success to make the most effectual and judicious use of the weapons and ammunition brought up, enfilade gun batteries to fire à ricochet should be prohibited beyond the distance of 650 yards.

NOTE 34.

CIRCUMSTANCES will sometimes occur, that a place may be taken by forming a breach from distant batteries, where neither time nor means will admit of a more matured operation. Such, for instance were the captures of Monte Video and Ciudad Rodrigo, and it is to be hoped that whenever such chances again offer, similar enterprise on the part of the British commanders will induce similar chivalrous attempts, and be crowned with similar success; therefore, it may have its use to endeavour to form some rough calculation, from the experience of these sieges, of the time required to form a breach of given dimensions with given means from given distances.

Referring to the Journals, we obtain the following facts.

	SIEGES.	Measurement of breach thoroughly accessible, in feet.	No. of shot fired.	Distance of battery from breach.	
1812,	Christoval . .	15	1,600	450	
	Badajos principal breach,	180	14,000	540	
	Badajos flank breached,	100	9,500	530	wall casemated.
	Badajos Curtain .	40	3,000	545	bad wall.
	Ciudad Rodrigo principal breach,	105	6,700	560	
	Ciudad Rodrigo lesser breach,	30	2,080	570	bad wall.
1813, July.	St. Sebastian's principal breach,	100	13,000	620	average distance of batteries.
	St. Sebastian's lesser breach,	30	5,000	620	do.
Aug.	St. Sebastian's addition to breaches,	330	41,000	520	do.
		930	95,880	4,955	

Taking the average of these nine operations, we find that a breach of 103 feet (being an opening sufficiently great to warrant an assault) can be made practicable by the expenditure of 10,653 shot from the distance of 550 yards. Now, assuming the rate of firing at 20 rounds per hour, that expenditure will occupy 532 hours' firing of a single gun, or 35 hours' firing of a battery of fifteen guns, which number is selected as being about the average force of the batteries used at the above operations. This calculation being assumed as correct, to find the time required for making a breach from the same distance with any other number of guns, becomes merely a simple rule of proportion, it being however observed, that some addition to the periods must be made when the guns are fewer, and some deduction when they are greater, it being invariably found in breaching that the more numerous the engines employed, the greater is their proportional effect over any smaller number.

The above-calculated periods for forming breaches, will be much abridged by the free use of 10-inch shells filled with powder, to be lodged in the clay behind the wall, as soon as the masonry gives way.

The effect of shot fired for that purpose was observed to be very inconsiderable, many of them apparently only serving to ram the clay more firmly; whilst the shells from the garrison, which fell into the parapets of the trenches, frequently in their explosion blew away a considerable portion of the parapets, or made large and deep holes in the solid ground.

It may not be without its use to observe, that the quantity of ammunition necessary for forming a breach in the ordinary defensive walls in Spain and other southern countries, is far greater than in those of northern countries, as the cement used in their construction after a few years attains a solidity surpassing that of the stones which it unites; and the consequences are, that walls built with moderate-sized, or rather with small rough stones well bedded and their interstices well filled up with mortar, become so completely one body, and so incapable of being split into large pieces, that they can only be brought down from distant batteries by being literally pounded into small particles.

It would not, perhaps, be too much to assume, that double the means would be required to breach such a wall over those necessary to breach the ordinary brick revêtements of France and Flanders.

NOTE 35.

THE field officer in the trenches gained great credit, and most deservedly so, for the steady manner in which the troops received this sortie, and the readiness and good order with which they repelled the assailants.

It is extremely to be desired that the officer commanding in the trenches should take far more authority upon himself than he usually assumes at our sieges, and with such view, it would be better that the duty were assigned to general officers only, and be taken for twenty-four hours each relief. The general officer of the day should feel himself responsible for every thing done in the trenches during the period of his command: the quantity of work performed, and the fire kept up by the batteries, equally with the regularity of the troops.

The disposition of the guard of the trenches, and the direction and precision of their fire, claim his particular attention, and there is no arrangement which would not be benefited by the interference of his authority. Till such a supreme and high command be established in the trenches perfect regularity can never prevail, nor will an equal stimulus be given to the various services engaged in the operation.

The difference of effect produced by the fire of the guard of the trenches, when well or ill commanded, was particularly commented on by the officers of the garrison of St. Sebastian after their surrender. They observed and inquired with great curiosity, why on some days they could not peep through an embrazure, or look over the parapet for an instant, with impunity, while on other days they were permitted to expose themselves fully to view almost unnoticed.

The proper method of posting the guard to receive and repel sorties also requires some detailed regulations, and such can never so well emanate as from the experience of general officers, who have repeatedly commanded in the trenches at a siege.

There were eight powerful sorties made by the garrisons at these attacks, the six first of which obtained greater or less success, viz.

At Christoval, on the 10th May, 1811.

2d.—At Ciudad Rodrigo, on the 14th January, 1812.

3d.—At Badajos, on the 19th March, 1812.

4th.—At Burgos, on the 5th October.

5th.—At Burgos, on the 8th October.

6th.—At St. Sebastian, 27th July, 1813.

And two which were repulsed with loss, without obtaining any advantage whatever, viz.—from St. Sebastian, on the 27th August, and from the citadel of Bayonne during the night between the 14th and 15th April, 1814.

Analysing the events of the six sorties for the causes of their partial success, we find that at Christoval the trenches were lost merely in consequence of the inadequate front of defence which had been established against the place. The troops were ably disposed to meet the events that occurred, and their loss must be imputed altogether to the want of some controlling authority, to restrain their impetuosity and regulate their movements in the moment of success.

At Rodrigo the success of the sortie was entirely owing to the want of a proper understanding, and well-concerted movement, on the part of the officers commanding the old and relieving guard of the trenches.

Respecting the sortie at Badajos no palliating observations can be offered; nor at St. Sebastian, where the guard, composed of Portuguese troops, though lodged in a good and sufficient parallel, were so completely surprized in full day-light, as to have one third of their number carried prisoners into the place; but at Burgos the garrison were indebted for their success, as much to the imperfect state and inadequate front of the trenches, as to any other cause.

The errors, therefore, which gave an opening for the success of three of these sorties must be pretty equally divided between the engineers and the troops; but as at

Badajos and St. Sebastian, the front of defence of the trenches was ample and good, the guard having been surprised and overcome before it was prepared to resist, must have arisen from want of sentinels, due communication between the officers, and a proper arrangement of the troops.

These are the points, therefore, which require some regulations; but under any circumstances, much will ever depend on the vigilance and intelligence of the officer commanding in the trenches, whatever be his rank, or for however short the period of his command. On coming on duty he should make himself master of the intent and nature of the different lines of works, parallels, approaches, and communications, so as to post his men to the best advantage.

Each officer in command of a detachment should be made acquainted with the disposition of the troops in his front, and on his right and left; and should be made to study the different communications around him, so as to be able to bring up his force to the point attacked, in the best order and by the shortest route. The men of the Guard in the advanced portions of the trenches should not be permitted to lie about the parallel, but should be made to sit on the banquette, prepared to stand to their arms on the slightest alarm, in the order they will be required to oppose an assailant.

The engineers also should pay the utmost attention to facilitating the repulse of sorties, by putting good and easy banquettes to the parallels, and keeping the crest of their parapets at its proper height. Under this view it would be better not to revêt the first parallel, but to form it with such a slope that the troops can readily mount over it to use their bayonets. It must nevertheless have a good and easy banquette, and the parapet be made to shelter those posted behind it. In advance of the first parallel a revêtement is essential to gaining sufficient cover to shield the troops from missiles, and its omission cannot be justified; therefore increased attention should be paid to render the banquette easy, and keep it constantly efficient, whether formed with steps or a slope; and, perhaps, under some circumstances it would be practicable to make even the revêtement itself in steps to the crest of the parapet.

The engineers should also take care that materials and stores be not collected in piles or heaps in the parallels or approaches, so as to block up or impede the communication along them: and wherever, as will sometimes happen, an unexpected obstacle (such as the roots of an aged tree,* or foundation wall) is found to delay the completion of a portion of the parallel or approach, a free passage should be temporarily formed round it. Wherever an approach is more than three feet deep, the rear should be made with a slope; or steps, or other means of speedily getting out, should be formed along its rear, at short distances from each other; and the return of the several approaches should be well prolonged, as further means of obviating embarrassments. A neglect of due precaution at Badajos, to keep the rear of the parallel accessible, caused numerous casualties to occur from an unlucky shell which fell into the parallel, whilst much crowded, during the relief of the guard, and which exploded almost immediately after touching the ground.

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* At the attack of Badajos the stump of a very large tree, which had been cut down about two years, was found while breaking ground to occupy the centre of the parallel; and its roots spread so much, and were so difficult to clear away, that it required the second night's work to render this point of the same breadth and depth as the other portions of the parallel.

The events of these sieges show that a bold and vigorous sortie in force might carry destruction through every part of a besieger's approaches, where the guard is injudiciously disposed and ill commanded; but that if due precautions have been observed in forming the approaches and posting the defenders, any sortie from a besieged place must be checked with loss in their advance, when the approaches are still distant; or when the approaches are near, should a sortie succeed in pushing into them by a sudden rush, the assailants must inevitably be driven out again in a moment, with terrible slaughter.

NOTE 36.

THE defence of breaches made and stormed under any circumstances whilst the approaches are still distant, is so very advantageous, that against an intelligent governor and brave garrison, the chances of success are unfavourable to the assailants; and if, as in this instance, the whole fire of the besiegers' batteries has been directed to forming the breaches, and the garrison in consequence sustain so little loss that the front breached can be fully occupied, and men enough remain to form strong reserves, then height of situation, with the difficulty of the ascent over the ruins of the breached wall, give a decided superiority to the defenders. But if, in addition to these advantages of position and force, the breach be well retrenched, and the governor has adopted the precautions recommended in every treatise on defence, of covering the approach with chausse-trapes, has prepared small mines at its foot, spread herses over the ascent, planted chevaux-de-frise on its summit; or, as in this case, has preserved a quantity of flank fire, both direct and vertical, to play on the assaulting columns during the struggle, no conceivable superiority of courage over a brave enemy can counterbalance such advantages.

It is, therefore, no disparagement to the troops that they failed in the assault on the 25th July, when the acknowledged difficulties of the enterprise caused them to be soon recalled; nor need they be backward to admit that they succeeded on the 31st July from the unusual firmness and perseverance with which Sir Thomas Graham called forth their strength and energies, till unlooked-for accuracy of fire from distant batteries, and the consequent explosion of their opponents' defensive combustibles, gave their heroic exertions a fair chance of success. Had the struggle been merely that of man to man, the result would not have remained for many minutes doubtful; for the troops mounted the breach, and gained the summit at the first rush, in sufficient numbers and sufficiently formed to have borne down any body of men which could have been formed on the rampart to oppose them. The French foreseeing this, had, with their usual skill, trusted their defence to artificial obstacles, which should prevent the assailants advancing beyond the crest of the breach, and to directing a most powerful and close fire on the summit, which was far too confined to admit of cover being established on it, to guard the assailants from the effects of missiles. This will be understood by reference to the section of the breach, *Fig. II. Plate* 12, where *a a* shows the confined summit of the breach, *b b* the retaining wall of the rampart, *c c* walls of ruined houses, well loop-holed, with a banquette in their rear, to pour a close musketry fire on the summit *a*. The circulation along the rampart to the right and left of the breach being impeded by means of walls and traverses formed across the rampart *a a*, the assailants, on attaining the summit of the breach, must therefore either force over those defences under a close fire from the ruins *c c*, or jump down the wall *b b*, twenty-four feet in depth.

The events of the 31st July, as well as being highly honourable, are truly encouraging to the British soldiery, as they show that in future sieges, when batteries of guns and mortars shall be used exclusively to destroy and harass the garrison,—when their labour shall aid their courage by carrying the approaches to the breached wall, and their efforts to assault be duly supported by a close fire from the trenches, no enemy will be found desperate enough to dispute a breach with them. Every advantage of confidence, formation, and force will then be on their side; and how can a few worn-out dispirited men, exposed to a murderous fire every time they attempt to stand up, pretend to resist a numerous body elated with success, and only requiring one effort to crown their labours with a complete triumph?

The maxim of Marshal Vauban, however, cannot be too much attended to; viz. never attempt to carry any thing at a siege by open force which may be gained by art and labour. His mode of gaining possession of a breach is so certain, so simple, and so bloodless, and forms such an advantageous contrast with the open assaults at the sieges detailed in this work, that every one must regret the inability of the army to have followed the same mode of proceeding. Speaking of the breach in the ravelin, he thus expresses himself:—

" Preparatory to making the lodgment a great quantity of materials must be provided, such as gabions, fascines and sand-bags, and also a number of entrenching tools; which should be carried as far forward as possible, without encumbering the trenches, and piled on the reverse of them. Care must be taken that all the lodgments from which it is possible to fire on the part to be attacked, are in a perfect state, and that the batteries of cannon, mortars, and pierriers, are in readiness to open; and the officers commanding in the batteries and lodgments, should have it fully explained to them on the spot, how they are to act according to the signals made.

" The signal may be from a flag elevated on the lodgment of the covered-way, at such spot as shall be seen from all the batteries and lodgments. Every thing being ready, the infantry will place their muskets through the sand-bags laid for their protection on the top of the parapets, and every one will await in silence the signal to open his fire by the flag being hoisted, and to cease firing on its being lowered.

" Thus prepared, two or three sappers will ascend the breach—not up the centre, but on its right and left, next the end of the broken wall, where cover is usually found between the part of the revêtement which remains standing, and that which has been beaten down. The two or three sappers will lodge themselves in these hollows, throwing the rubbish down, but working upwards, and will procure cover for two or three other sappers, who will be sent to their assistance, the whole being prepared to leave their work on any advance of the enemy. Should that occur, as soon as the sappers are off the breach the signal is made, and all the batteries and lodgments instantly open a heavy fire on the enemy, who cannot remain under it, but will quickly disperse. As soon as that is perceived the flag must be lowered, and the sappers again sent forward, who, resuming their work, will push it forward as much as possible; again abandoning it, however, whenever the enemy make their appearance, which may occur a second, and even a third time. Each time, however, that they do come forward, all the lodgments and batteries, even those of the covered-way, must resume their fire, which cannot fail to drive back the enemy, and give opportunity to establish the lodgment. It will not probably be till the first or second time of returning that the garrison will spring their mines, (if there be any,) and which may be considered an infallible sign that they give up the work. These mines are unlikely to be attended with any great effect, for they may be sprung at a moment when the workmen are not on the breach; or they may have been formed under the ridge, where the sappers do not work, or at worst can only destroy three or four men. In the mean time the sappers will have prepared some cover in the excavation, which when completely ready, and not till then, must be occupied by small detachments; but as soon as the garrison abandon the work, the lodgment must be made openly in the breach, and be well secured along the whole excavation, but not beyond it. Afterwards the work will be extended to the right and left along the rampart by saps, forming a portion of a circle which will occupy all the terre-plein of its flanked angle: from thence it will be carried along the two faces of the work till every thing is duly prepared to force the retrenchment at the gorge."

The idea, therefore, that the difficulties of a siege are greatest in carrying the breach, being totally unfounded in fact, must not be allowed to become general in the army. If reliance is to be placed on Vauban, a man who had served at one hundred, and directed above fifty sieges, it would appear, on the contrary, that when lodgments have been properly established on the covered-way and crest of the glacis, and that the approaches have been carried across the ditch to the foot of the breach, there is no operation of a siege more certain, more easy, or costs so few men, as gaining its summit. This is not the common-place verbiage of a projector wishing to establish a new theory; Vauban repeatedly, and always successfully, attacked breaches in this manner, and the French in their practice confessed its efficiency when used against themselves. In 1708, Marshal Boufflers, by authority from the King, given on the advice of the most experienced generals of that warlike age, ceded the strongest fortress in France to Prince Eugene and the Duke of Marlborough, to avoid the risk of the breaches being carried by storm; and in those days the superiority of the assailants was never doubted. The art of attack has since that period received various improvements, and the defence remains the same.

The orders given by Buonaparte to the Governor of Antwerp in 1809, when threatened by the English, and which orders, intended as a general regulation, have since been published by his authority, are of a nature to introduce barbarity into war, and to throw nations two thousand years backward in civilization: they, therefore, call loudly for counteraction.

The following is an extract from the order alluded to, dated 11th August, 1809, and signed Napoleon:—

"Nous lui ordonnons de nous conserver cette place et de ne jamais la rendre sous aucun prétexte. Il n'oubliera jamais qu'en perdant notre estime il encourt toute la sévérité des lois militaires, et qu'elles condamnent à mort tout commandant et son état-major s'il livre la place lors même que deux lunettes seraient prises et le corps de la place ouvert. Enfin nous entendons et voulons qu'il courre les hasards d'un assaut, pour prolonger la défense et *augmenter la perte de l'ennemi.* Il songera qu'un Français doit compter sa vie pour rien si elle doit être mise en balance avec son honneur, et cette idée doit être pour lui et pour ses subordonnés le mobile de toutes ses actions. Puis donc que la reddition de la place doit être le dernier terme de tous ses efforts et le résultat d'une impossibilité absolue de résister, nous lui défendons d'avancer cet événement malheureux par son consentement ne fût ce que d'une heure et sous le prétexte d'obtenir par là une capitulation plus honorable."

Can it be for a moment admitted that governors selected from amongst the modern counts and barons of Buonaparte's creation, are superior in principles of honour or courage to those chosen from amongst the high-minded nobility of Louis XIV., and that they should feel it an infamy to follow the practice of the latter, and by a capitulation stop the effusion of blood when it can no longer conduce to the preservation of their garrison?

This idea cannot be for a moment entertained, and the unnecessary carnage such a proceeding must occasion, would, doubtless, be equally revolting to the French officers as to those who dispassionately read the order at a distance, and most high-spirited men would rise superior to the threats of the author, and spurn his commands thus uselessly to sacrifice the remnant of a brave and confiding garrison.

It is, however, possible, that Buonaparte, by a system of magnificent rewards and severe punishments, may, on some occasions, induce the two or three chief officers of a garrison to give obedience to his mandate, and refuse their consent to accelerate the surrender of a place one single instant; but happily his opponents possess sufficiently strong corrective means to alarm the feelings and control the energies of the troops, so as to render the obstinacy of the chiefs unavailing.

Hitherto in our sieges, the works of the attack have been so imperfect, and the assaults of such doubtful issue, that no brave man has had a plausible excuse to capitulate; but when the approaches shall be pushed properly forward, if the governor insists on the ceremony of his last retrenchment being stormed, as by so doing he spills the blood of many brave men without a justifiable object, his life and the lives of the garrison should be made the forfeit. A system, enforced by terror, must be counteracted by still greater terror. Humanity towards an enemy in such a case, is cruelty to one's own troops. If, by an order of the governments opposed to France, equally public with the order of Buonaparte, it were directed that, whenever a garrison resisted to desperation, the allowed consequences of a successful storm should be fully carried into execution; the practice of not capitulating would soon drop, and towns would be given up when resistance ceased to have an object beyond a further effusion of human blood. The principle to be combated is not the obligation to resist behind the breach; for where there is a good retrenchment, the bastion should be disputed equally with the counterguard or the ravelin, and can as safely be so, but the doctrine that surrender shall not take place when successful resistance becomes hopeless; a doctrine, requiring a degree of blind obedience, only fitting a predestinarian Turk, and not to be tolerated by a reflecting Christian.

NOTE 37.

THE system of attacking fortresses by making a breach from distant batteries, and hazarding the event on the valour of the troops instead of ensuring success by their labour, has become familiar to, and rather popular with the British, from having generally succeeded in their colonial wars, where climate justifies, if not renders necessary, such mode of attack, delay being frequently more fatal than repulse. The extreme hazard, and little eligibility of such hasty proceedings are, in consequence, less apparent to British officers than to those of other nations; but a strict investigation will show, that even in their own operations, whenever a distant and hasty attack has succeeded, it has been against places ill-constructed and weakly garrisoned, or else improperly defended or basely surrendered.

This is a point of so much consequence to establish, (for if made clear the system can never be voluntarily adopted in future,) that an analysis of the principal sieges carried on by the British for the last 100 years is added.

The only conquests made by Great Britain within that period, where fortified towns have been attacked, are those of the island of Cape Breton, with its capital, Louisbourg, in 1758; the island of Belleisle, with the castle of Palais, in 1761, and the island of Cuba, with its chief city the Havanna, in 1762.

At the former, the landing on the island was a highly difficult and creditable exploit; but that being effected, the siege of Louisbourg was a very easy enterprise. As a transatlantic fortress, it had the reputation of great strength, but in comparison with an European fortress it was far otherwise. Its real nature, and the causes of its surrender, are well set forth in a memoir of the Governor the Chevalier Drucour, of which the following are translated extracts.

"To oppose them we had at most but 2,500 men of the garrison, and 300 militia: a fortification (if it could deserve that name) crumbling down in every flank, face, and curtain, except the right flank of the King's bastion, which was rebuilt the first year after my arrival. The covered-way, which had been raised as much as possible, was commanded and enfiladed throughout, as well as the Dauphin's and King's bastions.

"The enemy at first were very slow in making their approaches: on the 15th July (broke ground middle of June) they were still 300 toises from the place; at last, on the 26th July, the body of the rampart being open in different parts of the three bastions of the King, Queen, and Dauphin, at a council of war it was determined to capitulate.

"A governor surrenders a town when the breaches are practicable, and he has no resource by entrenchments: such was the case at Louisbourg, and every necessary was wanted for their formation. After the surrender, General Wolfe was obliged to place sentinels along the ramparts to keep his troops from moving in and out; the sutlers and the private men entering at the different gaps and breaches with as much ease as if there had been no ditch."

At Belleisle, the landing was attended with the same difficulties as at Cape Breton, and was effected in an equally creditable manner on the 21st March, in Port San Maria, after which the little castle of Palais was the only point capable of any resistance. The governor, however, Monsieur de St. Croix, had the activity after the landing, to throw up half a dozen redoubts in front of the town of Palais, which, being attacked after the usual manner of the British, by distant batteries, delayed the army eleven days before them, and were ultimately carried by the bayonet. The little castle of Palais being attacked in similar manner, was enabled to resist till the 8th June, being thirty-seven days after ground was broken before the redoubts, so that these two sieges, so insignificant in themselves, each occupied a period of time equal to the reduction of a first-rate fortress, and therefore could not have been either very vigorous or very powerful.

Success in the island of Cuba, should no more blind the judgment of the army on this point than at the other two places, for though the expedition was undoubtedly better fitted out, and more amply provided for a siege than any force ever sent from England, it was still far from having the means requisite for such an enterprise.

The city of La Havanna stands on the western margin of a broad and spacious harbour or rather lake, the entrance to which, from the sea, is only 350 yards wide, and is defended by two forts: one on either side: that on the westward, called La Puntal, is small but closely supported from the works of the town; that on the eastern side, called El Moro, is formed by a bastioned front extending across a rocky bluff or promontory, the rear of which being within the entrance of the harbour, and its flanks so scarped as to preclude a besieger from working round them, the garrison can, at all periods of an attack, communicate with their friends across the harbour.

The city, which contained a population of 35,000 souls, was very moderately fortified, its defences being little more than a naked scarp wall on a bastioned trace without outworks, and the ditch being very imperfect.

In the harbour were 12 line of battle ships.

The object of the enterprise was to obtain possession of the fleet and the defences generally.

The means were nineteen sail of the line and eighteen frigates, sloops, and bomb vessels, under Sir George Pococke, conveying a land force of 10,000 men, under Lord Albemarle, from Portsmouth and Martinico, to be re-inforced by 4,000 men from New York. A corps of sappers and miners was embodied for the enterprise under Lieutenant Colonel Mackellar the chief engineer.

The artillery, under Lieutenant Colonel Cleaveland, took out a small train of battering guns and mortars, to be increased to the number required from the men of war.

Viewing the enterprise professionally, and without reference to local difficulties, or other causes which may have rendered a particular mode of proceeding imperative, it would seem that the most advantageous plan of action would have been to have commenced by attacking the city; as then the great objects of the expedition would have been immediately attained, and the Moro, when afterwards attacked, having its rear as well as front exposed, and the defenders being left to their own resources, would have been capable of comparatively slight resistance.

The decision, however, was to attack the Moro Castle first, and for that purpose the troops were landed on the 7th June between the rivers Baco-nao and Coximar, about six miles to the eastward of the mouth of the harbour, and the Moro, receiving daily supplies and reliefs from the city, was able to resist for forty-four days after being invested, and for twenty-nine days after the besiegers broke ground before it.

The details of the operation are, however, so extremely creditable to the troops, and the engineers made such good use of the means with which they were supplied, that it is but justice to departed merit to give a summary of their proceedings.

8th June.

The main body advanced six miles to Guannamacoa, and dispersed a corps of Spaniards of about 6,000 men.

9th June.

The troops bivouacked at half distance between Guanpamacoa and the Moro.

10th June.

A field redoubt, on the hill of Cavanios, invested at the same time with the Moro fort.

11th June.

The Work on the Cavanios height, carried by storm almost without resistance, and a post established in it.

12th June.

The Moro was closely reconnoitred, and the parapets and scarps being ascertained to be of masonry of little thickness, and much exposed to view, it was decided to silence the fire of the fort by direct batteries, and there being little or no soil on the spot, gabions and fascines were ordered to be prepared for the mass of cover.

13th June.

This morning, a force of 1,200 men under Colonel Howe was landed at Chorea, seven miles to the westward of the harbour, for the purpose of blockading the town, and on the 15th was joined by a body of 800 marines.

Four batteries against the Moro were commenced at distances from 250 to 300 yards.

The navy supplied a quantity of cables for junk, and old sails to be made into sand-bags, and landed the mortars from the bombs and guns from the men of war till the 1st July.

1st July.

When the batteries opened against the defences with twelve 24-pounders, six 13-inch mortars, three 10-inch mortars, and twenty-six royal mortars. Three line of battle ships at the same time anchored within 700 yards of the fort, and united in a general cannonade of the defences. After three hours, the ships suffering very much, and having had 42 killed and 140 wounded, and the fort being too high to be much affected by their guns they were ordered to haul off, but the fire of the land batteries continued with great effect.

The Moro returned the besiegers' fire from sixteen 12 and 6-pounders, and one 8-inch mortar mounted on the land defences.

2d July.

The batteries continued to play on the defences, and the parapets and large portions of the exposed masonry kept tumbling into the ditch in such rapid succession, that, before evening, the fire of the fort was confined to two pieces, which discharged a shot at long intervals.

3d July.

Early in the morning, a fire broke out amongst the dry fascines and gabions, of which the besiegers' batteries were formed; and notwithstanding the greatest exertion of the troops to extinguish it by means of earth and water, it continued to spread throughout the day.

4th July.

The fire continued to consume the parapets.

5th July.

The conflagration now ceased, having consumed every part of the works except a portion of parapet containing two embrazures. An attempt was made to complete the destruction of the defences of the Moro, with the two guns firing through the two remaining embrazures, and two guns firing en barbette, but they were soon silenced by the artillery of the fort.

6th, 7th, and 8th July.

Employed in restoring the batteries.

9th July.

The fire on the Moro was resumed from twelve guns and the mortars, and continued throughout the 10th.

11th July.

The number of guns in battery increased to eighteen. In the afternoon the principal battery was a second time burned down.

12th, 13th, and 14th July.

Batteries playing on the defences. The number of guns now increased to twenty.

15th, 16th, and 17th July.

Batteries still playing on the defences, till the whole front, being in a state of ruin, and the artillery fire silenced, a sap was commenced from the batteries.

18th July.

The sap being unopposed by fire, was pushed half-way to the covered-way.

19th July.

The fort opened this morning from three guns, but which being immediately silenced, the sap was pushed to the covered-way, and a lodgment made in it.

20th July.

The ditch was now reconnoitred and found to be seventy feet deep, forty of which were cut in solid rock. The besiegers were unprovided with the means of passing it, nor had they now force to procure the necessary materials, the army having wasted during the operation to 4,000 men, and the fleet having 3,000 men sick from their labours on shore.

This enormous and deep ditch was therefore likely to have proved an insurmountable obstacle, when happily it was observed, that a thin ledge of rock had been left across the ditch opposite the salient angle of the bastion next the sea, to serve as a species of barrier to block up the entry, and the miners passed along its crest to the face of the escarpe wall of the bastion, and began to mine into the revêtement at two points.

The upper surface of the ledge of rock was too narrow to admit of the slightest cover being formed on it, and was, moreover, totally exposed to the opposite flank; nevertheless, so completely was the fire of the fort kept under by the batteries, that notwithstanding the miners used the ledge as their constant communication, only four were killed or wounded during the whole period of their labours.

A shaft was also commenced at the same time at the back of the counterscarp, to form a passage into the ditch.

22d July.

About an hour before day-break the Spaniards made a great effort from the town and Moro to dislodge the miners and destroy the whole of the approaches. Fifteen hundred men landed on the flanks of the attack, and began to ascend the heights, before they were discovered; but such was the confidence and good arrangement of the guard of the trenches, that they held the assailants in check till reinforcements came up, when they were driven to their boats with great slaughter. After this failure no further effort was made by the Spaniards to interrupt the miners, and they continued their work till the night of the 29th, when the charges were deposited in the chambers.

30th July.

At 2 P.M. a storming party of 22 officers and 396 men being formed under General Keppel in the advanced sap, with a supporting party of 17 officers and 170 men in their rear, and 150 sappers, with tools and fascines, being prepared to follow, the mines were sprung. That in the counterscarp had little effect; but those under the bastion made a practicable breach, wide enough for two men to enter abreast, and the storming party advancing along the ledge of rock, resolutely ascended the ruins, and, as soon as formed on the top, charged the garrison along the ramparts, killing many officers and 130 men, and making 400 prisoners. The remainder of the garrison took to their boats, losing, however, 213 drowned or killed from the fire of the assailants, who had to regret only 2 officers and 12 rank and file killed, and 1 officer and 27 rank and file wounded, during the assault. To add to the good fortune of the day about 2000 men joined from New York.

Notwithstanding this attack of the Moro presents an uninterrupted succession of energetic exertions and hardy deeds of valour, it cannot be concealed that it owed its success far more to the negligence, ill discipline, and inferior skill of the defenders, than to the overpowering means brought against them; for had the Spanish garrison been moderately active or resolute, how could a breach have been formed in such an open manner, or how successfully assaulted on a front of two or three men?

After this difficult and hardy enterprise final success was still distant, for the city of La Havanna, which contained the treasure and protected the ships, was untouched and amply garrisoned. To besiege it was impossible, not only from the lateness of the season, but also from the want of every necessary means, the entrenching tools being mostly expended,—the platforms worn out, the sand-bags gone, and the sappers and miners, gunners and pioneers, exhausted with fatigue; therefore, as an experiment, batteries were ordered to be raised to try the effects of a cannonade and bombardment, which, if they should fail, as the besieging force was reduced to 3000 effectives, it was decided to re-embark.

On the 4th August various batteries were commenced on both sides of the harbour, but principally along its right bank under the Cavanios hill; and on the 11th opened, by aid of the seamen, with 45 guns and 8 mortars. In four hours the artillery of the place became silent, and the governor sent out to negociate a capitulation, and either from want of courage, or want of knowing his duty, after some discussion, gave up the place, which could not have been taken from him; of such consequence is it to a state that governors and other officers should thoroughly understand the real danger from each different mode of attack.

The loss of the besiegers during these operations was, officers, 11 killed and 19 wounded, 39 dead by climate, 4 dead of wounds; 285 rank and file killed, 631 wounded, 130 missing, 657 dead by climate, 52 dead of wounds.

Nothing here written is intended to reflect on either of the commanders of the expedition to the Havanna, for every circumstance of their proceedings shows them to have been men of more than ordinary zeal and resolution, acting in perfect concert and harmony together, and doing the utmost with the means at their disposal. Nor is any thing meant to reflect on the conduct of the attack, which is considered to present an extraordinary instance of courage and perseverance, supplying the place of organization and force; but the causes which led to success are pointed out, that the army generally may know that the result of their sieges in all the operations of the last hundred years has been of doubtful issue, no force, previously to the year 1815, having been sent from England duly provided with means for obliging a fortress to surrender. Consequently an imperfect and hazardous mode of attack has hitherto been imposed on our commanders: but the knowledge having become general, that the reduction of a fortified place must be paid for in time and life, or materials and ammunition, it cannot be doubted that all future equipments for services involving the probability of a siege will be amply furnished with every necessary means; and it will rest with officers in command to undertake such nature of attack as they may consider most eligible.

NOTE 38.

After a perusal of the foregoing journals, and observing how very much the want of sappers and miners prejudiced every siege operation in Spain, it will be learnt with surprise that, during the whole war, from 1793 inclusive, England paid, fed, clothed, and lodged a very large body of engineers' troops, legitimately sappers and miners.

These, however, being designated the Corps of Royal Military Artificers, and composed chiefly of mechanics, were considered as more immediately intended for permanent works; and the most limited number were reluctantly spared for field service, it being difficult to make it understood how mechanics could be required in any great number with an army.

Previously to 1807, the companies of Royal Military Artificers were stationed independently of each other in particular garrisons; but in that year they were consolidated into a corps of 32 companies of 126 rank and file each, and a regimental staff being appointed, a general system of drill, discipline and organization was established. Each company had, however, only one officer, a sub-lieutenant, permanently attached to it, and was commanded for the moment by the senior captain of engineers, who might happen to be placed on duty wherever the company might be, so that it was not unfrequent for a company to be commanded by five or six captains in as many months.

The men were generally of superior acquirements and well disposed; but changing their officers incessantly, and their value being thought to consist altogether in their labour as mechanics, their discipline naturally became relaxed and their habits irregular.

On the failure of the attack of Badajos, in 1811, the most pressing applications were made, that half a dozen companies might be selected from the Royal Military Artificers to be formed into a body under the name of Royal Sappers and Miners, that officers should be permanently attached to the companies so selected, and after some instruction in their art, the six companies should be sent out to aid the troops in their future siege operations.

This application was repeated in the most forcible manner previously to the siege of Ciudad Rodrigo, and enabled General Mann, recently appointed Inspector General of Fortifications, to procure the name of the whole Corps of Royal Military Artificers being changed to that of Royal Sappers and Miners.

This change of name operated like magic. Every one in an instant saw the propriety, nay, absolute necessity, of the whole body being instructed in sapping and mining, and an institution was created by Lord Mulgrave for that purpose at Chatham.

The formation of the Institution at Chatham was followed by another simple change of equal or even paramount utility, viz., obliging the officers of engineers, whilst amongst a stated number of the junior of the several ranks of Second Captain, First Lieutenant, and Second Lieutenant, to be for that period actually the regimental officers of the companies of sappers.

This measure, by linking together the men and officers, and closely connecting their mutual interests, gave discipline and pride to the soldier, whilst it conferred the utmost benefit on the engineers, by obliging each officer, during three periods of his military service, to perform regimental duty and to acquire due experience in the drill, discipline, and interior economy of troops. On the strict and impartial observance of this rule, and making every officer take his chance of the station and service on which his company may be employed during the whole period of his being on the list for regimental duty, the efficiency of the Corps of Sappers and Miners, and the zeal and assiduity of the officers will ever mainly depend. Neither commanding influence, nor petty favoritism should be allowed to interfere with this regulation.

The Company at St. Sebastian was the first which entered the field after these great changes, and the men were found useful and intelligent.

Since that time each company has been instructed in succession, and a detachment of greater or less strength has borne a useful part in all the military operations of the empire; and one company has even had the high honour of participating with credit in a splendid naval triumph.* Indeed, justice requires it to be said, that these men, whether employed on brilliant martial services, or engaged in the more humble duties of their calling, either under the vertical sun of the tropics, or in the frozen regions of the north, invariably conduct themselves as good soldiers, and by their bravery, their industry, or their acquirements, amply repay the trouble and expense of their formation and instruction.

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* Under the idea that it might become necessary to land and destroy some of the batteries and works covering the harbour of Algiers, a company of Royal Sappers and Miners, under Major Gosset, was embarked in Lord Exmouth's fleet. Owing, however, to the daring intrepidity and able nautical manœuvres of Lord Exmouth, their services as miners were rendered unnecessary.

On this point, it may be observed, that a most happy selection was made of an officer as Director of the Institution at Chatham in Lieutenant Colonel Pasley, who, uniting great zeal and unwearied perseverance to good talents, has succeeded in extending the course of instruction far beyond the original objects of the Institution, and has filled the ranks of the Sappers with good scholars, good surveyors, and good draftsmen.

Duties, however, are in consequence performed by some of the companies with which their calling seems to have little or no natural connexion; and apprehensions might be entertained, that the vital object of keeping a select corps of hardy and well disciplined sappers ready for siege duties would be lost sight of, did not the name they bear keep it in recollection, and ensure, under every nature of employment, that the officers will, for the sake of character, keep their companies instructed in sapping and mining.

In order, however, to ascertain that they do so, should not the expertness of each company, in the art of sapping, form an item in the half-yearly inspectional report, and be ascertained and certified in similar manner by the Inspecting Officer as their attainments in the common drill and exercise?

NOTE 39.

Concluding Observations on the Attack of Fortresses with reference to the Sieges in Spain.

A VERY cursory perusal of the foregoing journals will serve to make apparent, that the sieges in Spain were carried on by the smallest possible force, under the peculiarly unfavourable circumstances of inefficient siege establishments, inadequate ordnance, and the country being so exhausted as not to furnish means of transport to bring up even moderate supplies of materials and stores.

To these disadvantages must be added, that the French garrisons were composed of the most veteran and most confident troops in the world, and that powerful armies were held in readiness to unite and march to their relief as soon as they should be menaced, altogether forming a combination of difficulties which seemed to preclude the possibility of success.

Those who have scrutinized the details will have remarked that these difficulties were parried by unusual foresight and guarded secresy in the previous preparations for the several attacks, by judgment and decision in seizing the opportune moment for their commencement, and by a daring enterprise and hardy valour in all employed, from the general to the soldier, scarcely to be paralleled in other similar operations.

Viewing, therefore, the reduction of Badajos, Ciudad Rodrigo, and St. Sebastian, abstractedly as martial achievements, they must be admired as daring efforts of firmness and talent to rise superior to circumstances, applauded as brilliant instances of courage triumphing over art, and commemorated as proud deeds of arms, alike honourable to the army and to the national character.

Lest, however, the eclat of these hardy deeds should perpetuate a mode of attack adopted through necessity, it is observed that the sieges in Spain, viewed professionally and in detail, cannot be recommended for imitation, as they are, in principle and practice, opposed to the peculiar excellence of the modern system of attack, which consists in a steady endeavour by skilful combinations of science, labour, and force, to render success certain, with the least possible expenditure of life.

Such perfection was impracticable in Spain, from causes already explained. It was, however, in some degree placed within our reach in 1814, and completely so in 1815.

It is, therefore, much to be regretted that the attack of Bayonne was interrupted, and still more that the operations in France in the following year did not furnish opportunity for a siege; as, in that case, the firm hand which grasped at success in the Peninsula, by the bold and hardy efforts detailed in these journals, would have given an example of a sure and almost bloodless triumph over a fortress, by combinations of labour and art, which would have served as a guide and authority for the future.

Notwithstanding the want of this example, the paramount excellence of such mode of proceeding at a siege must not be lost sight of, and happily every facility for its adoption continues to exist.

England has with provident care, through a long state of repose, preserved and matured her means of offence and defence. Desirous to remain in peace and amity with the world, she has adopted the surest mode of effecting it, by keeping prepared to retort aggression with instant and powerful effect. Every rank of her army is now filled with men of experience or instruction, her artillery has been rendered perfect in their siege duties, and her corps of engineers abounds in officers, who, uniting experience to theory, are capable of planning and directing any siege, however arduous or difficult; and have the means of carrying their plans into effect in a corps of Sappers and Miners, which for drill, discipline, and instruction stands pre-eminent.

It must, however, be recollected that no exertion of science, bravery, or labour will be availing, unless supported by powerful means, and that the reduction of a fortress must be paid for in time and life, or in ammunition, materials, and stores. Happily on this point England possesses indisputable advantages; her arsenals are most abundantly supplied with every military store; her magazines are equally overflowing with ammunition and combustibles; and her siege implements, machinery, and ordnance may be regarded as unequalled in quality as well as quantity: further, her fleet gives her the means of transporting the heaviest equipments with rapidity and little cost almost to the scene of action; whereas the equipments of all continental nations can only move to their destination by a tedious and expensive land carriage from arsenals in the interior. That abundance should prevail at our sieges therefore rests with ourselves; and it cannot be doubted that in future wars, the acknowledged bravery and hardihood of our men being supported by the superior means we have it in our power to supply, and a scientific direction drawing as much benefit from their labour as from their bravery, England must rise pre-eminent in the art of reducing fortified places, and her attacks become certain and comparatively bloodless; and then will the commencement of a siege be hailed with joy as the forerunner of an easy, sure, and brilliant triumph.

After detailing the deficiencies in Spain, it affords pleasure to show by the return on the next page, the extremely abundant means furnished to the army in France in 1815. The amount forms a curious contrast with the establishment in the Peninsula only four years previously, as detailed in Note 1.

Colonel C. Smyth, the commanding engineer, divided these means as follows:

First corps of the army, 8 officers of engineers, 3 sub-lieutenants, 126 sappers, 1 field train, 2 civil artificers, 33 Flemish drivers, 59 horses, 13 Flanders' waggons, 1 forge cart.

Second corps of the army, 10 officers of engineers, 1 sub-lieutenant, 136 sappers, 2 civil artificers, 35 Flemish drivers, 56 horses, 13 Flanders' waggons, 1 forge cart.

Reserve, 11 officers of engineers, 1 sub-lieutenant, 197 sappers, 1 field train, 1 civil artificer, 51 Flemish drivers, 88 horses, 19 Flanders' waggons, 1 forge cart.

To 80 pontoons, 8 officers of engineers, 4 sub-lieutenants, 265 sappers, 5 field train, 32 civil artificers, 2 lieutenants, 167 royal artillery drivers, 348 Flemish drivers, 105 seamen, 861 horses, 4 wheel carriages, 4 boats, 16 Flanders' waggons, 4 forge carts.

The remainder were at head-quarters or on duty in Flanders.

RETURN OF THE ENGINEER ESTABLISHMENT WITH THE ARMY.

Head-Quarters, Paris, October, 1815.

	Officers of Engineers.						Royal Sappers and Miners.				Royal Military Surveyors and Draftsmen.	Field Train.		
	Lieutenant Colonels.	Captains.	Subalterns.	Brigade Major.	Adjutants.	Total.	Sub-Lieutenants.	Serjeants.	Drummers.	Rank and File.		Assistant Commissary.	Clerks of Stores.	Conductors of Stores.
TOTAL	2	26	30	1	6	65	10	43	21	765	5	1	5	9

	Civil Artificers.					Drivers from Royal Artillery.						
	Carpenters.	Collar-makers.	Wheelers.	Smiths.	Tinmen.	Lieutenants.	Staff Serjeants.	Serjeants.	Trumpeters.	Shoeing Smiths.	Farriers.	Corporals and Drivers.
TOTAL	5	6	8	16	8	2	4	7	2	3	2	160

	Flemish Drivers.				Seamen.		Horses.		Carriages.					
	Serjeants and Corporals.	Shoeing Smiths.	Trumpeters.	Drivers.	Petty Officers.	Seamen.	Private.	Public.	Pontoons on carriages.	Boats on carriages.	Wheel carriages.	Flanders waggons.	Forage carts.	Office cart.
TOTAL	12	1	3	460	3	102	222	1118	80	4	4	63	8	1

Medical Department	{	**3 Assistant Surgeons.** **1 Veterinary Surgeon.**
Assistant Engineers	.	**2**

NOTE 40.

FIVE or six years after these observations were hazarded, Sir Howard Douglass published (in 1819) a highly scientific treatise on the descending force of balls fired as Carnot proposes, which being strongly corroborative of the opinions here offered, the liberty is taken of transcribing them.

"Had M. Carnot founded his system upon a power evidently impotent as the projectile force of a boy's arm, this part of his work would not have merited serious investigation; but the principle he assumes is specious, and the impression it has produced so considerable, that I have been induced to draw up the results of a careful investigation by which I have satisfied myself, and hope to satisfy my readers, that 4-ounce iron balls, or cubical pieces of iron of ten lines side, cannot, in descending from the vertex of a very elevated curve, acquire velocity sufficient to give a mortal blow, excepting on an uncovered head, and that the effect of musketry under such circumstances would be almost harmless.

"It is quite clear that M. Carnot has formed his theory upon the parabolic hypothesis, which, I must inform such readers as are not acquainted with these matters, is the theory of a projectile's flight in a non-resisting medium. This theory, considerably erroneous in all cases, is particularly and greatly so with small projectiles; and its deductions, as applied to the velocity of descent of small balls used in very elevated short ranges, are quite fallacious. The velocity of the ball in a horizontal direction (which by this theory would be constant, and to the projectile velocity, as radius to the cosine of the angle of elevation,) being inconsiderable, it is evident that the effect of vertical fire must depend upon the velocity of descent in the direction of the curve. Estimating this according to the parabolic theory, (as the secant of the angle of elevation,) the motion would be slowest at the vertex of the curve, and the velocities of the projectiles be equal, at equal distances, from that point. According to this supposition, we should assign to the descent of small balls, discharged at an elevation of 75° or 80°, such accelerated velocities, as would, if true, be quite sufficient to do good service in the way M. Carnot suggests; but the fact is, that there can be no acceleration beyond a limit which, with small balls, is very much less than is generally imagined.

" From the vertex of the curve, where all the vertical motion is lost, the ball begins to descend by an urging force which is nearly constant, viz. its own weight. This force would produce equal increments of velocity, in equal times in vacuo, but in air the descent of the ball being resisted more and more as the velocity accelerates, the urging force will, at a certain velocity, be opposed by an equal resistance of air, after which there can be no further acceleration of motion, and the ball will continue to descend with a velocity nearly terminal.

" When I began to consider this interesting problem as applied to vertical fire, I was soon satisfied that M. Carnot had entirely overlooked terminal velocity; and I shall show, from his own words, that this is the case. It is not necessary to exhibit here the investigations by which I have established the impotency of M. Carnot's vertical fire I shall only state the results, not to embarrass the conclusions with abstruse matter. The solutions are computed from the theorems given in Dr. Hutton's Tracts, and although the results may differ a little from the truth, yet it is quite clear, that in the descent of the balls there can be no acceleration of motion beyond a certain limit;—that with small balls this velocity is very much less than persons who have not investigated this curious problem would imagine; and that M. Carnot has evidently overlooked this circumstance.

"The velocity which a musket ball has acquired when the resistance becomes equal to the weight, or urging force of descent, is only about 180 feet in a second. The potential altitude, or the height from which the ball must descend in vacuo, to acquire a velocity equal nearly to the terminal velocity, is 523 feet. Hence in the first place, it would be a waste of means to use the full charge; for a musket ball fired upwards, with the ordinary quantity of powder, would be projected to a greater height than 523 feet; and it is evident that all above this is unnecessary.

"The indentation which a musket ball, moving with a velocity of 183 feet per second, makes on a piece of elm timber, is about one tenth of an inch: this might, perhaps, be sufficient to knock a man down, if by chance it were to fall upon his head; but in no other case would it put him 'hors de combat.'

"Now, as to the 4-ounce balls. The diameter of a French 4-ounce ball is 1 inch, 2 lines, 5 points, which, reduced to English measure, is 1.28038 inches.

"Its content is 1.00909 inches.

"The weight is 4.72247 ounces, if made of cast iron, and 4.8624 if of wrought iron.

"The terminal velocity of the cast-iron ball is about 201 feet.

"The terminal velocity of the wrought-iron ball is about 204 feet.

"The potential altitude of the cast-iron ball is about 631 feet.

"The potential altitude of the wrought-iron ball is about 650 feet.

"M. Carnot recommends that the balls should be made of hammered iron; but adds, that as the charge of powder for a mortar is small, balls of cast-iron may resist the explosion without breaking, and will answer as well. Now this observation shows that the author had not considered the effect of the air's resistance, nor doubted a sufficiency of force in his vertical fire: for the weight of a ball of hammered iron is greater than that of a ball of cast iron of equal diameter, and the superior weight or urging force of the former would generate greater terminal velocity than a lighter ball of the same size could acquire; the momenta of the two balls in question would be as 19 to 18.

"Four-ounce balls, discharged at elevations even considerably above 45°, to the distance of 120 yards, would not inflict a mortal wound, excepting upon an uncovered head. They would not have force sufficient to break any principal bone; there would be no penetration, but merely a contusion. This certainly would not oblige the besiegers to cover themselves with blindages, as M. Carnot imagines; for a strong cap or hat, and a cover of thick leather for the back and shoulders, would be sufficient protection from the effects of his vertical fire with small balls.

"The following experiments amply confirm this assertion. With respect to terminal velocity it must be remarked, that although balls may not be thrown to a height sufficient to produce a velocity nearly terminal, yet the resistance of the air prevents, from the first, an uniformly accelerated descent. Thus the effect of the balls discharged at 75° elevation, was far inferior to that which we should have assigned them according to the parabolic hypothesis.

"A coehorn mortar was placed 100 yards from six new deal targets laid on the ground, and two new wadmill tilts spread out near them, to estimate by the impression made on them the force with which the balls would fall.

"The first round was with the usual tin case, containing 33 four-ounce balls, with a charge of one ounce of powder, elevation 45°. The case went bodily about 130 yards without breaking.

"Loose balls were then put in over a wooden bottom. After a number of rounds with the above charge and elevation, with different numbers of four-ounce balls, it was ascertained that the coehorn would throw 42 of them 100 yards, and that the spread was, on an average, about 10 or 12 yards.

"It was not very easy to hit the targets and cloths, although they covered a surface of 774 square feet; but, in one instance, 22 balls left their mark. The indentation on the surface of the deal was so small that it could not well be measured—it certainly was not more than one-twentieth of an inch deep. A ball thrown with force from the hand appeared to make an equal impression. Those which struck the wadmill tilt did not penetrate, but merely indented the ground underneath. The penetration of the balls into the ground (which was of the softest nature of meadow) was on an average, 2 inches; but the balls thrown by hand did not penetrate so far.

"The mortar was then elevated to 75°, and with 2 ounces of powder and 42 balls made nearly the same range as before; but the spread was increased to about 40 yards, so that it was difficult to hit the surface aimed at. Several balls did, however, at length fall on the targets and wadmill tilts. The impression on the former was something increased, but still so trifling as hardly to be measured; the balls did not go through the cloth, and the penetration on the meadow was only increased to about three inches."

NOTE 41.

THE following is the record of the experiment made by the Bengal Artillery at Fort William.

"A line of an indefinite length was marked out. At one end was placed a 13-inch mortar, supposed to be in the retrenchment of the gorge of the bastion, or at the foot of the curtain behind the ravelin as directed by M.

Carnot, and at a distance of 160 or 170 yards from the breach. At 160 or 170 yards was put up a linen curtain, bent into the shape of the flanked angle of the bastion or ravelin, and supposed to represent the breach made on that angle. Behind this curtain, on the continuation of the line towards the field, were set up two rows of bandrolls at ten or twelve feet asunder, intended to represent by the space enclosed by them a column of troops marching to the assault."

"The 13-inch mortar was twice fired with a charge of 1 pound 4 ounces of powder, and 441 eight-ounce balls, weighing 230 or 231 pounds, at 45° erection. Almost the whole number fell on the breach, or near it, in the closest order. Few or none of the balls fell between the mortar and the breach.

"The 13-inch mortar was then fired with a charge of 1 pound 6 ounces of powder, and 900 four-ounce balls; weighing 228 pounds, at 45° elevation. The balls fell on the breach in a close pelting shower, and just beyond it. Lastly, the mortar was fired with 1 pound 8 ounces of powder, and the same number and nature of balls, at 45°. The shower of grape then extended from the bottom of the breach about 50 yards, or all along the column of the assailants.

"The general spread of the grape was above 20 feet, or double the breadth of the head of the column. When viewed in the air on its way to the breach, it had the compact appearance of a large bunch of grapes. On examining the ground after firing the four rounds, the supposed breach and space occupied by the column of troops was, as it were, paved with eight and four-ounce shot. The ground was excessively hard, as the soil of

Bengal is before softened by the rains, yet had the balls made deep cavities in most parts of the space, on which they had fallen."

"*The balls were put into tin canisters, having a strong wooden bottom of about 3½ inches thick.*

"*It was owing to this bottom that the projectiles issued in the compact manner they did;* for closing over the charge of powder, and fitting compactly the rounding of the bottom of the bore of the piece, the inflamed fluid of the powder had no means of insinuating itself between the balls, and causing them to diverge or spread, but was obliged to push forward in a lump the whole loading."

"After this experiment with the 13-inch mortar, a 10 and 8-inch mortar were brought and fired, the former with 12 and 13 ounces of powder, and 240 eight-ounce and 532 four-ounce balls, and the latter with 6 and 6½ ounces of powder, and 114 eight-ounce and 228 four-ounce balls at 45°, both pieces with the like proportional effect. These grape, viewed in the air on their way to the breach and column of assailants, had the appearance of a flight of small birds so close, that the light could just be seen between each other."

NOTE 42.

ON examining the interior of these casemates, whilst the terms of surrender were still copying out fair, and consequently before steps could be taken to clear or purify the castle, it was altogether surprising to observe the mischief which had been produced by shot which had deflected from the cheeks of the embrazures, and entered the casemates.

To judge from the indentations on the walls, and the marks of slaughter and destruction which everywhere presented themselves, a direct fire into a casemated embrazure of the usual construction must render casemated batteries untenable: indeed, at this attack, the French loss was chiefly by shot which entered at the embrazures, and passed through the rear of the casemates. Such batteries should, therefore, be confined to situations where the embrazures can only be seen in the direction in which the guns they shelter can be pointed; or else the engineers ought to guard against this action of shot deflecting from the cheeks in the construction of the embrazures, which surely would not be difficult to accomplish where the fire of the batteries is, as in most works of defence, for a specific and limited object. Or, perhaps, it would prove more effectual, and it might be accomplished in most situations where direct fire only is required, such as on a causeway, the entry of a port, or a particular tongue of laud, to cause the gun to fire through a second opening made in a screen in its front, and then no shot could by any possibility strike the embrazure, unless fired almost perpendicularly to the two openings.

NOTE 43.

ONE of these attacks affords a remarkable proof of the superiority of ordnance on shore, over that in ships, when the cannonade is maintained at a greater distance than 6 or 700 yards. Sir Sidney with the Pompee an 80 gun ship, the Hydra of 38 guns Captain Mundy, and another frigate, anchored about 800 yards from a battery of two guns, situated on the extremity of Cape Licosa, and protected from assault by a tower in which were five-and-twenty French soldiers commanded by a lieutenant. The line-of-battle-ship and the frigates fired successive broadsides till their ammunition was nearly expended, the battery continually replying with a slow but destructive effect. The Pompee, at which ship alone it directed its fire, had above forty shot in her hull; her mizen topmast carried away; a lieutenant (Slessor), a midshipman and 5 men killed, and 30 men wounded. At length, force proving ineffectual, negociation was resorted to, and after some hours' parley the officer, a Corsican and relation of Napoleon, capitulated.—It then appeared that the carriage of one of the two guns had failed on the second shot, and the gun had subsequently been fired lying on the sill of the embrazure, so that in fact the attack of an 80 gun ship and two frigates had been resisted by a single piece of ordnance.

It was found on the arrival of the Hydra, at Malta, that every carriage of her quarter-deck carronades was more or less damaged, and many of them rendered unserviceable from severity of fire on the above occasion.

That the comparative effect of fire from ships afloat, or from batteries ashore, is altogether dependant on distance, has recently been most decidedly proved by Lord Exmouth in his cannonade of Algiers, for the Queen Charlotte, bearing his lordship's flag, being brought within fifty yards of the mole, poured such an irresistible fire on the works around her, as to silence every gun, and ultimately was enabled to withdraw with the loss of only 8 seamen killed and 131 wounded; whereas, the Impregnable of 74 guns, bearing the flag of Rear Admiral Milne, being anchored at the distance of 1,500 yards from the town, was so severely handled, that she lost 1 officer, 49 men killed, and 2 officers and 158 men wounded, without producing any effect on the batteries, and the rear admiral was even obliged to request a frigate might be sent to divert some of the fire he was under.

The other ships of the squadron also suffered very much in comparative proportion to their distance from the batteries which they engaged, and none of them, except the Queen Charlotte, silenced the ordnance opposed to them, although they fired for the whole period of the cannonade as fast as precision and accuracy would admit.

NOTE 44.

THE prompt, orderly, and successful withdrawal of the garrison from the Castle of Scylla, after the works had been rendered utterly defenceless by many days' firing of a besieger's artillery, and half the land front had been pommelled into a practicable breach, was an achievement combining such well-judged and well-timed naval and military exertion, as to deserve far higher and more general credit than it has been its fortune to obtain.

This operation had been contemplated from the first moment of the British entering the castle in 1806: indeed, the retention of Scylla, although so extremely desirable in several points of view, depended in two instances on the general commanding in Sicily convincing himself of the practicability of safely withdrawing the garrison when about to be overpowered by an enemy. First, as has been stated in the journals, Sir John Stuart, before the work commenced, attentively examined the localities, and secondly, his successor, General Fox, when the work was nearly half finished, made the officer who had suggested and planned the staircase accompany him from Messina to the castle; and it was only after much examination, and a thorough conviction of its being likely to effect the purposes in view, that he authorized its completion, and the retention of the post.

Nothwithstanding the countenance of these high authorities, the idea of a back staircase being made an appendage to a military post, was frequently a subject of much merriment and ridicule during its construction;

and accident had nearly fulfilled various predictions of its proving worse than useless in the hour of danger and need, for it so happened, that about the time the castle was reduced to extremities, a heavy gale of wind obstinately prevented all communication by boats with Sicily, and seemed to doom the garrison to captivity, and the staircase to general execration. Luckily, however, a lull took place just at the period the besiegers were preparing to give a general assault, and the favourable moment being eagerly seized, boats pulled across and brought every man safely away, although the French were at the moment scrambling into the castle through the breach.

The success of this experiment shows, that the British, whilst having an uninterrupted naval superiority, may, by similar expedients, occupy and defend without risk of losing the garrison almost any place washed by the sea. Indeed, some secure mode of communicating with the navy should invariably be made a paramount consideration in fortifying maritime posts, and the withdrawal of the garrison be expected of the commandant when the place can by no possibility be longer defended.

The circumstances attending the evacuation of Scylla are thus detailed in the despatches of General Sherbrooke, and Lieutenant Colonel Robertson the commandant, under date of Messina, 23d Feb. 1808.

"On the morning of the 15th instant, Lieutenant Colonel Robertson having informed me by telegraph, that the parapet of the work was destroyed, and that all his guns were dismounted or disabled, I felt very anxious indeed to withdraw the troops, but a continuance of the gale rendered this impracticable till the 17th, when during a temporary lull (every necessary arrangement having previously been made) the transports' boats protected by the men-of-war's launches ran over from the Faros, and succeeded in bringing away the whole of the garrison, who effected their retreat by the sea staircase to the boats, when they were exposed to a most tremendous galling fire of grape and musketry from the enemy till such time as they could pull out of the reach of it. I am happy to add that the loss of the troops in this exposed situation was only four killed and five wounded, and that of the seamen one killed and ten wounded.

J. C. SHERBROOKE,
Major General."

" In the night of the 15th the French pushed round the foot of the rock with the intention of destroying the staircase; but we happily discovered them and beat them off with the slaughter to which their desperate situation exposed them.

" The garrison was drawn off in succession, and the embarkation effected with the greatest order, notwithstanding the tremendous fire of grape and shells.—Our loss in the operation was small, and before we were a musket shot distance the French were in the fort.

G. D. ROBERTSON,
Lieut. Colonel."

NOTE 45.

THE following is the detail of the battering train equipment.

For Reduction of Flushing.

BATTERING ORDNANCE.

Iron	Guns	24-prs.	25 travelling carriages 25 garrison do.	50	9 shells 540 round 19 spherical 9 case 9 grape	each.
		12-prs.	travelling	6	9 shells 450 round 9 case 9 grape 34 spherical	
	Mortars, iron beds	13-inch	do. . . do.	2	315 shells 30 carcasses	each.
		10-inch	do. . . do.	14	405 shells 50 carcasses	
		8-inch	do. . . do.	8	405 shells 50 carcasses	
	Carronades	68-prs.	travelling carriages . .	6	120 round 18 shells 3 case 3 grape	each.
Brass	Howitzers	10-inch	garrison carriages . .	2	315 shells 18 carcasses	each.
		8-inch	travelling do.	6	315 shells 18 carcasses 18 case 9 spherical	
	Mortars, wood beds	5½-inch	do. . do. . . .	10	405 shells 20 carcasses	

Total 104 pieces.

For Reduction of Fort Bathz, Lillo, Liefkenshoek, and Antwerp.

24-pr. iron guns	12 . .	600 rounds each.
13-inch mortars	2 . .	450 do.
10-inch do.	14 . .	550 do.
8-inch do.	6 . .	550 do.
68-pr. carronades	2 . .	300 do.
5-½ inch mortars	8 . .	500 do.
10-inch howitzers	4 . .	520 do.
8-inch do.	6 . .	520 do.

Total 54 pieces.

In addition to the above 600 rounds of spherical case shot for 24-pounders, and five hundred 24-pounder carcasses were embarked for general service, and 500 rounds per gun for the field brigades.

Small Arm Ammunition.

Walcheren	Musket ball cartridges	3,000,000	rounds.
	Cavalry do. . do. . .	100,000	do.
	Rifle do. . do. . .	100,000	do.
Antwerp	Musket ball cartridges	5,000,000	rounds.

Return of the Royal Artillery embarked for the Scheldt Expedition in July, 1809, under the command of Brigadier General Macleod.

		Royal Artillery.									Royal Artillery Drivers.								
		Colonels.	Field Officers.	Captains.	Subalterns.	Surgeons.	N. C. Officers.	Gunners.	Drummers.	Total.	Captains.	Subalterns.	Vet. Surgeons.	N. C. Officers.	Drivers.	Artificers and Trumpeters.	Total.	General Total.	Horses.
Equipment embarked in the Thames.	Marching Battalions	..	2	16	26	6	109	826	11	996	..	..	..	..	..	..	....	996	....
	Horse Brigade	1	2	3	3	1	15	90	..	115	..	..	..	..	57	9	66	181	163
	Corps of Royal Art. Drivers	..	..	..	..	..	....	....	..	....	2	12	1	85	806	74	980	980	1499
	Total	1	4	19	29	7	124	916	11	1111	2	12	1	85	863	83	1046	2157	1662
Walcheren equipment embarked at Portsmouth.	Marching Battalions.	1	3	16	24	5	105	806	7	967	..	..	..	..	..	..	....	967	....
	Corps of R. A. Drivers	..	..	..	..	..	....	....	..	....	..	2	..	10	90	8	110	110	151
	Total	1	3	16	24	5	105	806	7	967	..	2	..	10	90	8	110	1077	151
	General Total	2	7	35	53	12	229	1722	18	2078	2	14	1	95	953	91	1156	3234	1813

Return of the Officers of Engineers and Officers, Non-Commissioned Officers and Privates of the Corps of Royal Military Artificers embarked under Colonel Fyers.

	Engineers·					R. M. Artificers.						
	Colonels.	Lt. Colonels.	Captains.	Subalterns.	Draftsmen.	Lieutenants.	Serjt. Majors	Serjeants.	Corporals.	Privates.	Drummers.	General Total.
For Walcheren	..	1	5	7	1	..	1	3	8	82	2	110
For Antwerp . .	1	1	6	10	1	1	1	4	14	156	4	199
Total	1	2	11	17	2	1	2	7	22	238	6	309

NOTE 46.

Two other plans of operations were proposed and discussed for this armament. One to disembark the troops near Ostend, and march by Bruges and Ghent on Antwerp. This was so evidently too long and complex a proceeding for a coup-de-main, that the idea was speedily abandoned. The second, was to make the island of Tholen the point of debarkation, and force the passage of the deep but narrow channel which separates Tholen from the continent.

The difficulties of this measure, and the objections to it, were however very strong.

First, The navigation of the eastern Scheldt was so imperfectly known at the period, that it would have been necessary to have sounded and buoyed out the channel before the fleet could have ascended to Tholen, which would have caused a delay of at least two days.

Secondly, It would have increased the distance to march from eighteen miles at Sandvliet to forty at Tholen.

Thirdly, The only good road from Tholen to Antwerp passes through Bergen-op-Zoom, and even after making a considerable detour through heavy roads to avoid that fortress, the line of communication would still have been little distant from its guns; and as the communication by water between Bergen-op-Zoom and Antwerp would necessarily have long remained open to the French, the garrison might have been reinforced to any extent, and have proved highly annoying on the line of supply.

This latter assumption is indisputably correct, for even on the 3d August, when fort Bathz and the whole of South Beveland were in possession of the troops, Sir R. Keats wrote to Sir R. Strachan, that " it is not in my power to command the navigation between Bergen-op-Zoom and South Beveland on account of the shallowness of the water and the intricacy of the narrow channel."*

It is, therefore, to be presumed, that most of the French troops poured into Flushing and Cadsand, would have been thrown into Bergen-op-Zoom and Bathz.

Fourthly, The French had the power, and, in all probability, would not have scrupled to lay all the low country to the eastward of Tholen as well as the island itself under water on the approach of the armament; and lastly, while the French should continue to hold Bathz, Terneuse, Cadsand, and Flushing, their fleet and flotilla might remain in perfect security in the Scheldt, even after the reduction of Antwerp.

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* Despatch dated Sabrina off Wemeldinge, 3d August, 1809.

Possession of South Beveland was therefore essential to the success of the enterprise under any plan of attack; and the destruction of the dock-yard and naval establishments of Flushing being one of the objects of the expedition, a descent must also necessarily have been made on that island, and consequently, acting on the line of Tholen, would have caused a third division of force.

The reduction of Fort Bathz was of positive and immediate necessity; but, under the circumstance of Tholen being selected for the line of operations, as the passage of men of war, or a flotilla, into the western Scheldt, would not have been necessary, the reduction of Walcheren might, in a military view, have been made a subsequent operation to that against Antwerp, had not the well known publication of Dr. Pringle rendered every one aware, that the climate of Zealand is of so pestilential a nature in autumn, as to preclude all hope of troops remaining effective in Tholen and South Beveland during the time necessary for two successive operations: and, further, it may be observed, that, in a period of two or three weeks between the operations, Flushing might have been rendered capable of a very protracted resistance.

NOTE 47.

If the object of the army had been merely to arrive before Antwerp, there can be little doubt that this ford presented a short cut; but in order to arrive before

Antwerp with the means of commencing a siege, or even of destroying the fleet, this ford offered no facility whatever.

In September, 1572, the Spanish General Mondragone, on the proposition of a native of the country of the name of Plumart, waded from the village of Aggar on the continent, to the dyke of Irzeken in South Beveland, with 3,000 men, carrying bags of powder and biscuit, to relieve Goes, then besieged by the Protestant forces; and having succeeded in passing over with the loss of only nine men, his unexpected appearance so alarmed the besiegers, that, although three times his number, they precipitately fled, leaving their artillery and baggage behind them.

This passage of Mondragone is generally spoken of as having been effected by the ford now discovered across the eastern Scheldt near Bathz; whereas, he crossed many miles more to the northward, and almost opposite to the island of Tholen, where the breadth of the water was two leagues, and the bottom far less firm and even than at this point. The village of Irzeken, close to which Mondragone attained the island of South Beveland, is only four miles from Goes.

On the 4th August, Captain Squire, by order of Sir J. Hope, made some peasants cross, whilst he observed their progress and marked the general bearings of the ford to be East by N.½ N., and the best point of starting to bear from Bergen-op-Zoom, N.E.; Hoonsdricht, E.; Oosendricht, S.E.½E.; Antwerp, S.½E. Distance from the pier of Bathz to commencement of ford, 400 yards.

Captain Squire further ascertained, that during spring tides and an easterly wind, the length of the channel fordable exceeded two miles, the depth being from two and an half to three feet, and the bottom a firm sand with a slight covering of mud. At ordinary tides, the depth of water usually exceeded three feet in the middle of the channel, and consequently, though it might be crossed by cavalry or infantry, it was too deep for carriages.

The secret communications of the army with the continent were kept up, during the whole period of the occupation of Bathz, by individuals who crossed and recrossed by this ford.

NOTE 48.

THE power of executing this march within a given time, is a very important feature in this enterprise, and deserves to be well considered.

The following is a calculation, made at the period, of the draft animals required for moving the battering-train, small arm and gun ammunition, and engineers' stores, from the Sloe Passage to Bathz. The distance was about nine leagues and the road good, except for some miles next the Sloe Passage, which, running along the crest of a narrow dyke, scarcely admitted of two carriages passing each other. Further, the surface of this dyke and the sides of the road generally being of fine clay, the rainy weather had rendered them quite soft, and in consequence it was calculated that each journey, and the return of the horses, together, would at least occupy four days.

It must be recollected that all the horses would be required for the second operation of transporting the train from near Sandvliet to Antwerp, and consequently all the guns and a large proportion of the ammunition must be deposited at Bathz previously to any movement on the continent.

	Waggons.	Horses.
1st day.—30 24-prs.* 10 horses each . . .	. .	300
120 rounds of ammunition for do.	65	260
12 10-inch mortars	. .	96
80 rounds of ammunition for do.	56	224
4 10-inch howitzers	.	32
80 rounds of ammunition for do.	18	72
4 8-inch howitzers	. .	24
80 rounds of ammunition for do.	10	40
General stores	20	80
2d day.—One day's more consumption of ammunition for the above ordnance .	149	596
3d day.—Ditto	149	596
4th day.—Ditto	149	596
5th day.—No additional horses required, as the first day's convoy would return, to start on this day.		
Total	616	2,916
Deduct waggons and horses which could be provided by the artillery.	150	1,000
Wanted in addition	466	1,916

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[*] These guns must have been borrowed from the navy, and mounted on such of the French carriages in South Beveland as could have been rendered serviceable, twelve 24-pounders only having been sent with the expedition for the reduction of Antwerp and burning the fleet.

It would be a curious inquiry to ascertain why England, possessing so many guns as to lay them up in incredible numbers in arsenals and ports over every portion of her dominions, and being so generally profuse in her outfits, should invariably, during the late war, have been thus parsimonious in the extreme in her siege equipments?

	Waggons.	Horses.
Battering train, *with four days' ammunition*	466	1,916
Engineers' stores	400	800
	866	2,716
Small arm ammunition, 60 rounds per man for 30,000 infantry . .	100	400
Additional means of transport to be provided	966	3,116

Amounting altogether (including ammunition for *eight* days' firing) to one day's work of 11,000 horses from the Sloe Passage to Bathz, besides the animals necessary for supplying the troops with food whilst on the march and after their debarkation on the continent, it being to be presumed that the enemy would drive all the cattle far from the banks of the river.

Now, as the island of Walcheren, a place of considerable trade, with a population of 36,000 inhabitants, could not, without the aid of horses brought from England, furnish carriage for a line of supply of only ten miles from Veer to Flushing, a very small proportion of the above number of horses or waggons were likely to be forthcoming in South Beveland, a place without trade, and containing only 13,000 inhabitants. Consequently, most of the horses and waggons must have been sent for to England, or other distant places, subsequently to the 6th August, which must have been attended with a delay fatal to the enterprise.

It is to be observed, that the foregoing calculation was made to meet the greatest possible exertion; but, for the sake of dispassionate consideration, let us suppose an additional thousand horses could have been procured, in aid of the thousand forthcoming, making altogether 2,000 applicable for this service—that stages had been erected, and the guns, ammunition, and stores taken out of the vessels and landed in the Sloe Passage, and the artillery carriages put together in readiness to commence moving forward on the 3d day from the 6th August, we shall then have the following calculation, on the presumption that the horses work in five separate divisions, distinguished as A. B. C. D. E.; which, considering the narrowness of the road along the dyke, and the very limited spaces in which the stores could be landed and packed, would seem to be as much as it would have been practicable to effect.

Division A. on the 9th and 10th takes half the engineers' stores from the Sloe Passage to Bathz.

Division B. on the 10th and 11th takes the remainder to Bathz.

Division C. on the 10th and 11th takes the small-arm ammunition to Bathz.

Division D. on the 11th and 12th takes heavy ordnance to Bathz.

Division E. on the 11th and 12th takes ammunition for one day's firing to Bathz.

Division A. having returned, takes on the 13th and 14th ammunition for one day's firing to Bathz.

Division B. having returned, takes on the 14th and 15th ammunition for one day's firing to Bathz.

Division C. having returned, takes on the 14th and 15th ammunition for one day's firing to Bathz.

On the 16th and 17th horses of divisions A. B. C. are ferried over to the continent, and divisions D. E. return with two days' more ammunition to Bathz.

This calculation shows that, on the assumption of 1,000 horses additional being forthcoming, ground might possibly have been broken before Antwerp about the 19th August, but certainly not earlier than that day.

NOTE 49.

The following field officers and companies of artillery served in the batteries during the bombardment.

Colonel Terrot.
Lieutenant Colonel Dixon.
——— ——— Wood.
——— ——— Franklin.
Major Waller.
———Griffiths.
———Dixon.

Companies.

1.—Capt. Adye.
—— Macarteny.
Lieut. Miller.
—— Dalton.
—— Morgan.
2.—Capt. Drummond.
—— Sandham.
Lieut. Dundass.
—— Macbean.
—— Bent.
3.—Capt. Campbell.
—— Skelton.
Lieut. Vinicombe.
—— Charters.
—— Wynn.
4.—Capt. Massey.
—— Fead.
Lieut. Grant.
—— Torriano.
—— Drawbridge.

5.—Capt. Smith.
—— Parker.
Lieut. Jones.
—— Brown.
—— Phelps.
6.—Capt. Rogers.
—— Brandreth.
Lieut. Walker.
—— Evans.
—— Birch.
7.—Capt. Munro.
—— Scott.
Lieut. Chapman.
Lieut. Ford.
—— Street.
8.—Capt. Patterson.
—— Brown.
Lieut. Robertson.
—— Thompson.
—— Willis.
9.—Capt. Oliver.
—— Wallace.
Lieut. Pringle.
—— Anderson.
—— Trench.

The following are the details of the artillery supplies, as forwarded by Mr. Stace, chief commissary.

Veer surrendered during the night between the 1st and 2d August; but the transports grounding frequently in moving from the Room Pot, it was the 3d before the operation of disembarking the heavy ordnance could commence.

The port of Veer was found to extend the whole length of the town, and to have in every part from 12 to 14 feet depth of water, so as to afford every facility for unlading at the wharf; and, in the course of the day, three 24-pounders with 300 rounds of ammunition and three 10-inch mortars were sent off for the reduction of Rammekins, and two 8-inch mortars to the park at Soubourg.

It was proposed that the horses of the field brigades should drag forward the heavy ordnance, and the island should furnish the transport for the stores and ammunition. This day, however, no country carriage could be procured, and, in consequence, 14 artillery waggons were employed to move forward the ammunition and stores required before Rammekins.

4th August.

Six 10-inch mortars sent to the park at Soubourg.

Twenty country waggons employed in conveying shells and stores.

5th August.

Sixty-three country waggons, 6 artillery waggons and 5 carts, laden with stores, sent from Veer; also four 24-pounders and three 10-inch mortars.

6th August.

Eight 24-pounders, and two 8-inch brass howitzers sent off.

Twenty-five country waggons and 10 artillery waggons employed in conveying stores.

It being found by a calculation made this day, that 120 tons of ammunition and artillery stores must be daily forwarded from Veer to Soubourg, and from thence be distributed to the batteries, and the island not being able to furnish the necessary means of carriage, fifty horses, intended for the transport of the battering train to Antwerp, were disembarked.

7th August.

Four 8-inch mortars and four 8-inch brass howitzers, and 35 waggon loads of stores, sent to Soubourg.

8th August.

Four 24-pounders, two 10-inch mortars, and two 10-inch brass howitzers, sent from Veer.

Seventy waggons dispatched with ammunition and stores.

9th August.

Six 24-pounders, and 47 waggons of ammunition sent to Soubourg.

10th August.

Five 24-pounders and 70 waggons with ammunition sent to Soubourg.

11th August.

Six 24-pounders, being the total of the ordnance required to arm the batteries, sent to Soubourg; also 63 waggon loads of ammunition and stores.

12th August.

One hundred waggons loaded with ammunition and stores sent to Soubourg.

13th August.

Eight 24-pounders, and 36 waggons laden with ammunition, sent to Soubourg.

14th August.

Five ships arrived from England with an additional supply of ammunition.

The total weight of ammunition and stores carted from Veer to the depôt at East Soubourg was 630 tons, and from East Soubourg to the batteries was 437 tons.

16th August.

The horses all employed in taking back to Veer, for re-embarkation, a proportion of ordnance, ammunition, and stores, necessary to aid the operation against Antwerp, viz.—fifteen 24-pounder guns, two 8-inch mortars, and two 68-pounder carronades, there being only twelve 24-pounder guns sent from England for that operation.

22d August.

The ordnance transports at Veer weighed at 10 A.M., and came to anchor in the Sloe Passage to wait for the tide; at 1 P.M. weighed again and dropped down to Rammekins, where they anchored at 6 P.M.

23d August.

The ordnance transports weighed at 5 A.M., and came to anchor again above Flushing: at 1 P.M. weighed again, and at 3 P.M. came to anchor off Flushing.

24th August.

The ordnance transports weighed at 6 A.M., and anchored off Bathz in the afternoon.

The following Return shows, at one view, the daily movement of the heavy ordnance and ammunition from Veer to Soubourg.

Date sent from Veer.	Ordnance mounted.						Rounds of Ammunition.					
	Iron.			Brass Howitzers				Mortars.		Howitzers.		
	Guns, 24-pounders.	Mortars.										
		10-inch.	8-inch.	10-inch.	8-inch.	Total.	24-pr.	10-inch.	8-inch.	10-inch.	8-inch.	Total.
1809.												
August 3d.	3	3	2	..	..	8	292	..	119	..	..	411
4th.	..	6	..	..	..	6	....	424	58	..	..	482
5th.	4	3	..	..	..	7	282	798	....	..	..	1080
6th.	8	..	..	..	2	10	274	700	....	..	..	974
7th.	..	..	4	..	4	8	320	160	90	..	..	570
8th.	4	2	..	2	..	8	1836	143	1031	..	..	3010
9th.	6	..	..	..	..	6	310	875	....	..	..	1185
10th.	5	..	..	..	..	5	1000	300	171	..	..	1471
11th.	6	..	..	..	..	6	1200	100	....	300	..	1600
12th.	..	..	..	..	..	..	2080	500	650	..	..	3230
13th.	..	..	..	..	..	..	200	192	....	..	184	576
14th.	..	..	..	..	..	..	8998	567	440	..	378	10,383
TOTAL	36	14	6	2	6	64	16,792	4759	2559	300	562	24,972

Put in battery before Flushing . . .	56
In depôt at East Soubourg	8
	64
Of the above ammunition there was expended during the bombardment .	9,985
Remained at the surrender	14,987

NOTE 50.

It is a curious fact that this superb expedition, fitted out regardless of expense, to effect an object dependent on the speedy reduction of the fortified places of Flushing, Bathz, Lillo, Liefkenshoek, and Antwerp, should have been sent from England without any means whatever for bringing forward the engineers' stores, although some thousand horses were embarked for other purposes.

It is, however, proper to mention in extenuation of this oversight, that, about a fortnight before the armament sailed, the Master General, on a pressing representation of the necessity of this service being attended to, ordered an equipment of 100 horses, with drivers, to be transferred from the artillery establishment, and embarked for the use of the engineers; but owing to some cause the order was never carried into effect. The consequence was, as has been seen, a delay of at least three if not four days in the reduction of Flushing; for if only fifty horses had been sent for the engineers' service with the left wing, the entrenching tools, &c. might have been landed on the Bree Sand, at the same time with the field brigades of guns, and have been brought up in sufficient quantities to have commenced operations against Flushing with vigour, on the night of the 1st August, instead of the night of the 5th August. It is altogether impossible to calculate the delay or consequences which would have arisen from this want of carriage, had the tools and stores for the attack of Antwerp been forwarded by any considerable land movement; but, in all probability, they would have been fatal to the success of the enterprise.

It is not, however, at sieges only that a horse equipment for the conveyance of tools and stores would prove useful, but on every movement for offence or defence.

No one can doubt that the greater or less efficiency of an army depends on all its component branches, with their equipments, possessing corresponding powers of movement, so as to form altogether one complete body or machine. In this particular, no distinction can be made between cavalry, infantry, artillery, commissariat, or engineers.

But how stood the case on every expedition during the late war? With respect to the three first, it was so clearly evident that it would be useless to send troops into the field without ammunition, or artillery without guns, that a complete and well-organized establishment, of very great magnitude, for those purposes, was invariably kept up in England, and a portion of it sent with every corps about to take the field.

Such establishments were also on a smaller scale kept up for the commissariat and hospitals; and on landing in an enemy's country, as the troops must be fed, and the wounded removed, every means of transport which could be procured was necessarily in the first instance added to their means.

The engineers, however, being totally unprovided with the skeleton of an equipment, could not be thus patched up; and no commander ever brought himself willingly to abstract from immediate and pressing services the drivers and horses necessary to create an entirely new establishment, till some misfortune, failure, or great emergency, rendered it imperative for safety, or that victory demanded it to secure her trophies.

It would be useless to recall the many instances in the early part of the last war, in which corps could not take advantage of various defensive expedients that presented themselves, such as destroying roads, blowing up bridges, retrenching posts, &c. from want of a field establishment of entrenching and miners' tools moving with them.

This deficiency of organization of the engineers' service was so strongly felt by the Duke of Wellington in Spain, in 1811, that he fitted out a field-train depôt of 30 mules, which was successively increased to 50, 70, 80, and, in 1813, to 120 mules, moving in a body. Subsequently, in 1814, this arrangement was modified into a proportion of 25 mules, marching with each division of the army; and the stores and tools they carried were found most highly serviceable on various occasions.

Napoleon, after the experience of nineteen years incessant warfare, by a decree, dated 25th March, 1811, fixed the establishment of horses, waggons, and drivers, with their lading, for the engineers' department of the French army as follows:—

Six troops of drivers for the field, and one in depôt: each troop for the field to consist of—

Men and Officers.

Officers	3
Non-commissioned officers	5
Brigadiers	6
Trumpeters	2
Artificers	7
Privates	121

Horses.

Draft horses	226
Spare horses	8
Riding horses	16
Total	250

Carriages.

Waggons with 4 horses, for entrenching tools	30
Waggons with 6 horses, for entrenching tools	4
Waggons with 4 horses, with bridge equipage	5
Waggons with 6 horses, with bridge equipage	5
Waggon with 4 horses, for miners' tools	1
Waggon with 4 horses, for petards and gunpowder	1
Forge carts with 6 horses	4

To convey 1,700 pickaxes, 170 miners' picks, 1,700 shovels, 1,700 long-handled shovels, total 5,270 entrenching tools; 680 felling-axes, 1,020 bill-hooks, total 1,700 cutting tools; 1,802 artificers' tools, 253 miners' tools, and 8,318 kil. weight of machinery and stores. Every article was made to a particular pattern and weight, and each waggon had its particular lading assigned to it.

One troop formed part of each corps d'armée, and constantly moved with it, the same as its other equipments.

The foregoing is an example of splendid military organization, and is certainly far beyond that desirable or necessary for England to possess. Some engineers' carriage establishment ought, however, to be created, and we should steadily keep in view to improve the shape and manufacture of all our field stores, implements, and tools, so as to combine strength with lightness and portability. We should fix the relative proportions of each nature of article of which given outfits of tools and stores ought to be composed, construct carts best adapted for their stowage and conveyance, apportion their lading and mode of packing, and decide on the proportions of tools and stores, in a certain number of carts, to accompany corps of different strength; so that, whenever a force shall embark for service, their field stores shall embark with them, as an organized equipment prepared to march as soon as landed and horsed.

It should be mentioned, that draft animals are far more readily to be procured in foreign and hostile countries than drivers, as corps of troops are frequently despatched from England without any field equipment, in consequence of the nature and place of their operations being contingent on passing events. Such was the force sent under Sir J. Craig, in April, 1805, first to Gibraltar, then to Malta, and ultimately, in December, to Naples. Immediately on landing, ample numbers of horses were purchased and allotted to the engineers; but although the stores were laden on carts, and prepared in every particular to march, they never could start for want of drivers, and such few articles as reached the frontier were forwarded by water-carriage to Gaeta. No one can possibly doubt the superior confidence to be reposed in a disciplined soldier over a foreign peasant, when acting as a driver for the first time under fire; and these considerations united seem to point out drivers as being more essential to the efficiency of the department than even horses, and that a certain number should be embarked with every equipment of stores.

This object might possibly be attained without any additional expense, by enlisting a certain portion of each company of sappers to act as drivers, from men accustomed to carting work in the country. Being a good driver would not interfere with being a skilful sapper. Indeed, men of that class are generally the most handy with the pick and shovel.

In Spain mule carriage was undoubtedly a principal cause of the efficiency of the army. The commissariat and stores, by that means of transport, became as moveable as the troops; and it should be mentioned, in justice to the Spanish muleteers, that after the first campaign, they felt as confident, and moved forward, or to the rear, with as much order and coolness on the eve of and during an action, as when the army was not in presence of an enemy. Such mode of conveyance will therefore, in all probability, be again resorted to, whenever the Peninsula becomes the scene of hostilities; and that the experience of the past war may not be lost, the following proportions of stores, tools, &c. drawn out in Spain after some years' experience, as being those best adapted for given numbers of mules, are here inserted.

On future services, as the tools to be carried will be lighter, the number of each article for similar means of carriage will be increased.

List of a Field Equipment of Engineers' Stores for various Numbers of Mules.

		Proportion for an Equipment of					
		Mules					
		100	50	30	25	20	12
Entrenching Tools.							
Pickaxes		496	248	160	144	128	96
Spades		100	50	38	38	30	22
Shovels		404	202	158	130	124	90
Spare helves	Pickaxe	240	120	60	40	40	20
	Shovels	240	120	60	40	40	20
Miners' Tools.							
Miners' picks		10	4	3	2	2	..
Do. pointed shovels		10	4	3	2	2	..
Jumpers		6	2	1	1	1	..
Borers	2 feet	2	2	1	1	1	..
	1½	1	1	1	1	..	..
	1	1	1	1	1	1	..
Tamping bars		2	2	1	1	1	..
Miners' sledge hammers		6	2	2	1	1	1
Crow-bars	5½ feet	3	1	1	1	1	..
	4½	4	2	2	1	..	1
Sandbags, bushel		600	240	..	..	..	..
Hand hammers	Large	2	2	1	1	1	..
	Small	2	2	1	1	1	..
Gads	1st size	2	2	1	1	1	..
	2d	2	2	1	1	1	..
	3d	2	2	1	1	1	..
Scrapers		3	3	2	2	2	..
Needles		3	3	2	2	2	..
Wedges		2	2	1	1	1	..
Masons' Tools.							
Masons' Hammers		18	9	8	6	4	2
Wood mallets		2	2	..	..	..	..
Trowels		6	6	..	..	..	..
Chisels of sorts		20	20	..	..	..	..
Iron levels with plumb bobs and lines		4	4	..	..	..	..
Carpenters' and Sawyers' Tools.							
Felling axes		54	17	22	15	10	7
Broad axes		11	6	8	5	3	1
Bill hooks		200	80	80	60	40	20
Hand saws		47	23	22	22	20	6

		Proportion for an Equipment of					
		Mules					
		100	50	30	25	20	12
Grindstone, 16 in. diam. × $3\frac{1}{2}$ in thickness		1	1	1	1	..	..
Spikes, boxes		1	$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{3}$	15lb.	15lb.
Nails of sorts, boxes		1	$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{3}$	15lb.	15lb.
Saws	Tennon	2	1	..	..	..	..
	Turning	2	1	..	..	..	..
Files for	Pit saws	120	120	120	120	60	..
	Cross-cut	36	36	36	36	18	..
	Hand	24	12	12	12	12	12
	Tennon	24	12	..	..	..	..
Setters	Pit saws	2	2	2	2	1	..
	Cross-cut	1	1	1	1	1	..
	Hand	2	2	2	2	1	1
Planes double and single iron	Trying	2	1	..	..	..	..
	Jack	2	1	1	1	1	..
	Smoothing	2	1	1	1	..	..
	Of sorts	4	2	2	2	2	..
Plow plane with irons complete		1	..	..	..	..	..
Adzes		10	6	6	4	4	2
Guages		2	2	2	2	2	..
Augers of sizes		12	6	6	4	4	2
Drawing knives		4	2	2	1	1	1
Chisels	Mortice	6	3	3	2	2	..
	Firmer	12	6	6	2	2	..
Scribing Guages		6	3	3	2	2	..
Chalk lines and reels		7	6	6	6	4	2
Hammers	Claw	4	2	2	2	2	2
	Riveting	2	1	1	1	1	..
Oil stone		1	1	1	1	1	..
Rag stones		2	1	1	1	1	..
Two-foot rules		10	6	6	6	4	2
Pit saws		4	4	4	4	2	..
Cross-cut saws		2	2	2	2	2	..
Chalk, lbs.		5	5	5	5	2	..
Gimblets	Spike	6	3	3	2	2	2
	Common	18	9	9	4	4	4
Smiths' Tools.							
Small pack-saddle forge		1	1	..	..	..	..
Anvil, small		1	1	..	..	..	..
Vice, large		1	1	..	..	..	..
Steelyards		1	1	..	..	..	..
Hammers	Sledge	1	1	..	..	..	..
	Hand	1	1	..	..	..	..
	Bench	1	1	..	..	..	..
	Lett	1	1	..	..	..	..
Pincers, pairs		1	1	..	..	..	..
Files	Flat	9	9	..	..	..	..
	$\frac{1}{2}$ round	6	6	..	..	..	..
	Round	3	3	..	..	..	..

	Proportion for an Equipment of					
	Mules					
	100	50	30	25	20	12
Tongs of sorts	4	4	..	..	..	..
Slices	1	1	..	..	..	..
Pokers	1	1	..	..	..	..
Handvices	1	1	..	..	..	..
Steel for repairing tools, lbs.	40	40	10	10	10	10
Coals, bushels	50	50	..	..	..	..
Various Stores.						
Fascine chokers, pairs	32	8	..	..	..	..
Hambro' line, skeins	16	9	8	8	10	4
Paint — White lead, lbs.	5	2	2	2	..	..
Paint — Lead colour	10	5	5	5	..	..
Paint — Linseed oil, pints	4	2	2	2	..	..
Paint — Turpentine, pints	1	1	1	1	..	..
Paint — Brushes — Large	2	1	1	1	..	..
Paint — Brushes — Middling	3	2	2	2	..	..
Paint — Camel hair pencils	12	4	4	4	..	..
Large blocks — Double	1	..	..	..	..	..
Large blocks — Treble	1	..	..	..	..	..
Rope — 2-inch tarred coils	1	1	1	1	1	..
Rope — 3-inch white, for tackle, small coils	1	..	..	..	..	..
Marquees — Captains'	1	..	..	..	..	..
Marquees — Subalterns'	1	1	..	..	..	..
Round tents	10	3	1	1	1	1
Handscrew jack, middling size	1	..	..	..	..	..
Sap forks	2	..	..	..	..	..
Saucisson made up, yards	100	100	100	100	50	..
Canvass, yards	12	12	12	12	6	..
White tracing tape, yards	3000	3000	3000	3000	1500	..
Needles — Sewing	12	12	12	12	6	..
Needles — Packing	6	6	6	6	3	..
Coarse thread, lb.	1½	1½	1½	1½	1	..
Twine, lbs.	3	3	3	3	1	..

N.B.—*No mules for carrying plans and official papers are included.*

In the two first columns for 100 *and* 50 *mules, the stores requiring it are supposed to be secured in boxes.*

In the third column, viz. for 30 *mule loads, the felling and broad axes are supposed to be carried in tarpaulins or canvass bags, to save weight.*

In the fourth column, viz. for 25 mules, the felling and broad axes, and bill-hooks, are carried in tarpaulins. With 20 mules, the handsaws also, and nails, spikes and steel, are carried in tarpaulins. Under 20 mules there should be no boxes carried.

The above will serve to show the very trifling weight of a liberal engineers' field equipment. One hundred carts, drawn by one or two horses each, with one hundred drivers, would serve to move stores and tools sufficient for a large army;* and as 5,000 drivers, and 10,000 horses were kept on foot last war for the efficiency of the guns and ammunition, an establishment of two troops for the conveyance of stores and tools could not be deemed unreasonable or an oppressive addition to the burthens of the country; particularly as the horses and drivers, when not in the field, might, with much utility and saving of expense, be employed on the public works, in lieu of contractors' horses and drivers.

NOTE 51.

At the period of this operation, the English trusted to bombardment alone to reduce places; and its complete success in this instance, as well as previously at fort Bourbon in Martinique, and at Copenhagen, gave it a celebrity which led many officers to consider bombardment the true basis of attack. Subsequently, however, at five of the sieges in Spain mortars were altogether discarded; and as such extremes are unlikely to be good, it may be useful to consider the nature and efficiency of bombarding towns, and also the proper employment and real value of mortars in the attack of fortresses.

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* One-horse carts, even in hilly districts, constantly draw 15 or 18 cwt.; now, as a pickaxe weighs only 5 lbs., and a shovel only 4½ lbs., ten horses in ten carts would, under all circumstances, be able to move forward entrenching tools sufficient for the employment of 2,000 men. Such an establishment in Spain, to the amount of fifty carts, would, consequently, have converted positive deficiency of stores into absolute abundance at the several sieges.

To bombard a town, is merely to shower down upon it shells, carcasses, rockets, hot shot, and other incendiary missiles to burn or destroy the buildings, and kill the inhabitants, leaving the fortifications untouched. In a well-constructed place, the military experience few casualties under a bombardment, they, as well as the powder and stores, being lodged in buildings by their construction proof against the effects of missiles; and consequently, both the garrison and the defences are nearly as efficient at the conclusion as at the commencement of a bombardment. Being so, it is apparent such mode of attack can never succeed, except against a very small place, where bomb-proof cover cannot be obtained; or where the governor is a weak man, whose sense of duty yields to his feelings of humanity; or that his garrison be insufficient to keep the inhabitants in subjection, under the miseries inflicted on them. The first was the case at fort Bourbon, where want of shelter and the apprehension of the principal powder-magazine not being fully bomb-proof, were alleged by the governor as the causes of his capitulating.* The two latter apply in their full force to Copenhagen, and at Flushing the attack was latterly prosecuted in the manner of a siege, and the governor capitulated on account of a breach having been nearly formed in the face of the left bastion, so that casual circumstances alone gave effect to the bombardment at those places. Why, therefore, it will be asked, were bombardments so invariably resorted to by the English during all the early periods of the late war? The answer will be found in the inefficient state of their siege establishments, as detailed at the commencement of this work, and in Note 1.

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* The effects of the bombardment on fort Bourbon are detailed at the end of this note.

To reduce a place by a regular siege is, in other words, to direct every effort against the fortifications, the garrison, and the armament, leaving the inhabitants and the buildings unmolested. This mode of attack is certain in its effects, but requires that the engineers should be provided with considerable assistance; whereas, bombardment is an operation of no engineer science, and might be carried into effect by the artillery officers without engineers nearly as well as with them. Bombardment was, therefore, naturally resorted to by the English, as an expedient to palliate their inability to carry on a regular attack.

That bombardment is not availing against a governor who is firm, innumerable examples might be cited; but suffice three well-known facts. In 1757, Frederick of Prussia bombarded the large and populous city of Prague for twenty-two days, in such a furious manner that the town was nearly destroyed, and the inhabitants suffered so severely that they rose in general rebellion, and attempted to force the governor to surrender; but he remained steady to his duty, hung two of the principal senators, and by his firmness gave opportunity for the battle of Kolin, which obliged the king to retire from before the place. In 1793, equal firmness was shown by the Dutch governor of Williamstadt, under a furious bombardment, and the French, having trusted to mortars alone to reduce the place, failed in the attempt. The third, is that of Gibraltar, which was bombarded for two years previously to the attack by the junk ships in 1782; but who ever heard General Eliot allude to the sufferings of his garrison from the enemy's shells as a sufficient cause for even thinking of a surrender?

The ideas the French entertain of its inefficiency may be collected from the following extracts from the instructions issued by Napoleon, for the conduct of governors in besieged towns, and signed by Bernadotte, Minister at War.

" Quant aux effets des bombes, et des autres projectiles incendiaires, nous examinerons plus tard les moyens de les diminuer; mais nous observerons dès ce moment, qu'ils n'ont jamais contraint une place bien défendue à se rendre.—Les anciens sièges en offrent la preuve; et les exemples tout récens de Lille, de Thionville, et de Mayence la confirment."

A strong objection to bombardment as a general system, is the difficulty of effecting it at a distance from the sea, or the depôts of a state. Some idea of the great quantity of carriage required to keep up a bombardment for a considerable time, say 100 days, (the town of Landau, with scarcely a bomb-proof in it, resisted a violent bombardment for 80 days, and the little fort of Andaye for 68 days, and therefore a large place with casemates may be supposed capable of almost an indefinite resistance) may be formed from the facts, that in

1759, Admiral Rodney threw into Havre-de-Grace 19,000 heavy shells and 1,150 carcasses in fifty-two hours to destroy a few boats; that in 1792, the Duke of Saxe Teschen threw into Lille in 140 hours without effect, 30,000 hot shot and 6,000 shells; that in 1795, Pichegru threw 3,000 shells into Manheim in sixteen hours, and 5,000 shells into the fort of the Rhine; and at Copenhagen, in 1807, in three days of a partial heavy firing, 6,412 shells, and 4,966 shot were expended besides carcasses; and at Flushing in 36 hours, the land batteries, and gun and mortar boats, threw about 8,000 shot and 4,000 shells into the devoted town, besides 5,000 shot thrown into it by the fleet.

On the score of humanity, such a system of attack should be avoided wherever possible. The cruelty of it is inconceivable to those who have not witnessed its effects, which fall chiefly on the aged, the infirm and the helpless; and it is surely unworthy of a powerful people to seek for success by the destruction of private property and the mutilation of women and children, when they might command it by a scientific proceeding, harmless to all but those in arms.[*]

How much more glorious would the annals of this country appear if the future historian could write:—"The Danish fleet giving great jealousy to the English, who considered it likely to fall into the hands of the French and be used against them, demanded of the Danish government that the ships should be moved out of reach of their enemy; which demand not being complied with, Great Britain, by a powerful and well-directed siege, obtained possession of the fleet, without injury to any peaceable individual, or the destruction of a single article of private property." Such might have been the attack, and with far greater certainty of success than by the bombardment which took place, had the expedition been sent with due establishments and due equipments to carry on a regular siege, and then no one on earth could have offered a reasonable objection to the measure.

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[*] After the surrender of Ath, in 1745, in consequence of a furious bombardment from Marshal Saxe, it was urged against the governor on his trial, and admitted by him, that only fourteen of his garrison had been killed.

As the slaughter of the inhabitants and the desolation of the place are described by eyewitnesses as having been dreadful to behold, some judgment may be formed from this statement of the usually comparative suffering of the soldier and citizen under a bombardment.

All officers of practical experience are agreed that bombardment is less certain and efficient than a regular siege, and when thoroughly understood to be so in England, it will probably fall into disrepute. Therefore, to fulfil a duty by using the utmost endeavours of an individual to prevent a species of attack so abhorrent to the general feelings of an Englishman, becoming the national mode of reducing towns, the following quotation from a celebrated French military writer is added as an additional authority to those already adduced of its inefficiency when firmly resisted. After vehemently condemning the barbarity of the proceeding, Monsieur Bousmard concludes—

"Mais heureusement pour un succès que quelquefois elle arrache, cette affreuse méthode recueille cent échecs et s'en prépare mille. Déjà les armées qui l'emploient la confondent avec l'art des sièges. Bientôt elles n'en connoîtront plus d'autre, et auront complètement oublié qu'il en exista un aussi efficace que celui-ci l'est peu; et toute place que sa garnison voudra réellement défendre finira par devenir pour elles une barrière aussi impénétrable qu'elle le seroit pour une armée de Tartares."

Value of Mortars at a Siege.

As instruments to be used in furtherance of the regular attack, mortars are, however, highly useful, and in some cases indispensably necessary; particularly to search behind and knock down the defensive traverses, to drive the garrison out of their retrenchments, and carry destruction and disorder through every portion of their interior defensive expedients, to tease and harass the guards and tirailleurs, burn the barracks, storehouses, and depôts of provisions, tear up bridges, break down dams and sluices, explode expence magazines, and annihilate many earthen defences not to be affected by shot. As weapons of personal annoyance, they are also of great use by their vertical fire both great and small; for instance, in a confined advanced work, shells from a few mortars will, besides destroying the defences, cause innumerable casualties if it be kept fully garrisoned; or, if to avoid loss, the enemy keep but few men in it, the work becomes open to assault.

A few pierriers and mortars at the siege of Badajos, in 1812, would have had such an effect on the Picurina redoubt, and heavy shells would readily have destroyed the dam of the inundation, and dislodged the defenders from the bridge. Indeed, to attempt to carry on a siege without the aid of mortars, can only be compared to a man volunteering to fight a formidable antagonist with one arm tied up.

At a regular siege, as well as at every other attack, a judicious mixture of the several natures of ordnance seems to be the proper medium. The proportions of each must vary according to the nature of the attack: but, when battering trains are fitted out without a precise object, it would seem advisable to have one mortar or howitzer with every four guns in large trains, and one mortar with every three guns in small trains, adding one pierrier to every three mortars. It is, however, submitted to the artillery officers if it would not be still better that a proportion of one-pound or half-pound balls should be added to their siege ammunition, in which case mortars of every diameter would be available as pierriers.

PART II.

THE foregoing note having been penned when the opinions of most officers of weight strongly inclined towards bombardment, and threatened to prevent the country from ever attaining due siege establishments, its general tendency was, in consequence, to decry bombardment. Since that period, however, more correct notions on the subject of reducing fortified places have spread throughout the army and the nation generally, and the siege establishments of the empire have been rendered completely efficient; so that there being no longer reason to dread that bombardment will usurp the place of the more scientific and certain operation of a regular siege, that mode of attack shall be considered dispassionately under all its various bearings.

Bombardment is, undoubtedly, an engine far more powerful, and far more readily wielded in the hands of the English than in those of any other people, from their maritime interests leading them most frequently to attack places near the coast, for which purpose they can transport and deposit on the spot the most numerous trains of artillery, and the most abundant supply of ammunition without any land carriage: and as it cannot be expected that a nation should forego the exercise of any peculiar advantages it possesses in making war merely on account of its inhumanity, where want of time or means leaves no choice, bombardment will probably be occasionally resorted to by England during the continuance of her maritime dominion. It may, therefore, be useful to make some observations on its employment in the mode most likely to render it efficient, which is considered to be an auxiliary to the regular attack.

In that character bombardment can never be otherwise than extremely serviceable; and now that it is fully understood how much the sure and speedy reduction of a fortified place depends on the quantity of ordnance employed in the attack, and how very much the expenditure of ammunition has increased with the strength of guns and mortars, expeditions will be very differently provided from those sent out during the late war, and instead of armies being accompanied with an inadequate battering train and inadequate ammunition for any species of attack, it is likely officers in command will request, and the government willingly furnish, sufficient supplies for both bombardment and a regular siege.

In that case, bombardment might go hand in hand with the regular attack. The mortar batteries might be established at distances from 1,500 to 1,800 yards from the place, to open at the same time with those of the first parallel, and fire over the workmen carrying forward the regular attack. If their fire succeed in inducing the governor to surrender on the 4th or 5th day of the attack, a most important advantage will have been gained; but if the bombardment fail of terrifying the garrison into submission, the army will be equally, or perhaps further advanced in their operations for forcing into the place, than if no bombardment had been attempted.

This double operation might be effected without any proportionate increase of labour to the troops, as the works of the regular attack being only 500 or 600 yards from the place, would naturally engross the attention of the garrison, and the mortar batteries in their more distant situations of 1,500 or 1800 yards would probably escape observation, or at all events be considered of such minor importance as to be little molested by fire, and might be erected by the peasantry.

It is, however, to be most particularly understood, that the means for bombardment must not detract from the means for the regular attack, nor those of the latter diminish the means for bombardment. There must be no mixture of the operations; each must be kept perfectly distinct. Far better will it prove to give the preference to either, and make it powerfully efficient, than to make two weak efforts. Success from either should only be expected from its own full powers to command it.

A regular attack may, in some degree, be abridged by the skill or boldness of a commander; but the success of a bombardment depends altogether upon its own efforts being powerful, unceasing, and maintained in their greatest fury till the proposed effect be produced.

The events of the bombardment of Copenhagen, in 1807, are strongly illustrative of these opinions. The army landed on the 16th August, broke ground on the 18th August, and established mortar and gun batteries at distances from 900 to 3,900 yards from the town. These batteries were fifteen days throwing up, and opened on the 2d September. After expending nearly 11,000 rounds of ammunition in three days' firing, from twenty guns, forty mortars, and fourteen howitzers, without any symptoms of an offer being made from the place to surrender, the proportion sent with the armament became so much reduced, that as no further supply could be procured without sending to England, (an operation of some weeks,) it was made a question whether to husband the remaining shells or to make a greater effort to terrify the governor into submission.

Some officers were for firing only a round from each mortar every half hour; but happily the juster opinion of making a great effort prevailed, and the ammunition of the several bomb-vessels being ordered to be landed for the service of the batteries if found necessary, an increased rate of firing commenced, and made such havoc, that in a few hours (the evening of the 5th September) General Peymann, the governor, sent to propose an armistice, which being refused, led to his immediate surrender.

To bombard a considerable place in a manner really efficient, at least 60 mortars or howitzers should be put in battery, and it would be better that the number were 100. They should fire without intermission throughout the day and night, and with that view be furnished with at least 200 rounds each per day. Any increased numbers of mortars used at a bombardment would not necessarily increase the expenditure of ammunition, as a certain number of rounds fired in three days from a hundred mortars is infinitely more likely to terrify a governor and population into submission than the same number of rounds fired in six days from fifty pieces.

The experience of every bombardment shows that its efficiency depends altogether on its being destructively incessant. Our own annals, in 1814, furnish strong proof of the inefficacy of a moderate bombardment against ships, in the failure of a dashing attempt to destroy the French fleet crowded along side each other in the basin of Antwerp. The English, with that view, being supported by a Prussian corps, established themselves in the village of Merxem, on the 2d February, and having a free choice of range and position, put seventeen mortars, two howitzers, and four 24-pounders in battery on the left of the village and behind Ferdinand's Dyke, at distances from 1,700 to 2,400 yards from the basin. These batteries opened on the 3d, and continued their fire throughout the 4th and 5th, till their ammunition being exhausted, the ordnance was withdrawn without having seriously injured a single ship.

It is submitted to the artillery officers whether it be desirable to make so much use as hitherto of the larger mortars in the bombardment of towns, as the expense and carriage of their ammunition is so very great, and an 8-inch shell has a momentum sufficient to penetrate through the roof of any building, or even through the arch of any moderate cellar, or other usual hiding place of the inhabitants, so that the 13-inch or 10-inch mortars can seldom be necessary except where shipping, casemates, sluices, or military works are to be destroyed.

PART III.

Effects of the Bombardment on Fort Bourbon in 1809.

FORT Bourbon being a solitary instance of a place purely military, and garrisoned by good troops, surrendering under the terrors of a bombardment whilst the works remained entire, the following statement of the effect produced by the shells on the magazines, armament and artillery buildings, drawn up by officers of the two services on the spot, cannot fail to be highly interesting, as enabling every one to form some judgment on the subject of bombardment.

The British troops, about 9 or 10,000 men, landed on the 30th January, 1809, and on the evening of the 19th February, had thrown up batteries which opened with 18 mortars, 5 howitzers, and 16 guns on the fort. This number of pieces of ordnance fired indiscriminately into the place till the 24th, when the governor capitulated. The following is a statement of the actual condition of the magazines, artillery storehouses, and armament of the place at the moment of the surrender.

Principal Powder Magazine

Has been very much injured, especially on the side which faces the curtain, where several shells have fallen upon the arch roof, two of which have made the haunches of the arch give way, there not being more than thirty-three inches thickness of masonry. The gable end to the south has one of its corners destroyed. The wall of enclosure is cracked in several places.

" According to the statement of the Director of Engineers the vault was split and had three crevices in it: the arch had given way along a space of from 3 to 4 feet, and on a breadth of many bricks. This last circumstance is the only one mentioned by the Captain General, he supposed the length to be of 4 or 5 bricks, the thickness of 5, and the interior protuberance of 1½-inch.

" This accident to the arch increased the apprehension of the magazine being blown up by the next shell which should happen to fall on it, and led to an immediate capitulation, although the revêtements and works generally were uninjured."—*Extract from the Moniteur.*

The Storehouse near the Cistern.

Its timber work, and roof, have been broken in pieces. A shell that has fallen at the gable end, has broken and destroyed two carriages on the lower story. This building is not capable of being repaired.

The new Storehouse serving for an Armoury.

The gallery has been destroyed to the foundation towards the two gable ends, its centre has been burnt by shells which set fire to several fire barrels. The staircase and the work-shop for arms have been broken, as well as the roof; and there only remains uninjured, the great staircase near the centre partition, it contains grape and boxes of balls arranged by calibre.

The old Armoury.

This building already condemned from its age, only contains flints, sea coal, leaden balls, and materials to which the rain could not do any injury. We had placed here all our means, at the beginning of the siege, all has been destroyed and dispersed by the explosion of shells, which fell there from all parts.

The two Posterns.

They contain about 300,000 ball cartridges and ammunition for field guns, filled cartridges, paper, &c. The postern No. 9 has not suffered. The door of the postern No. 10, although covered by a splinter-proof, has been broken by the explosion of a shell. It was necessary to secure it with filled sand-bags.

Service Magazines.

That of bastion No. 5, containing 15,000 cartridges, ammunition for two 12-pounders and two 8-pounder guns, faggots covered over with tar, about 20 shells loaded, from 5 to 600 lbs. of powder in barrels, exploded on the 21st in the evening; a corporal of artillery perished there. That of the curtain of the grenadiers, containing about 50,000 ball cartridges, 1,150 lbs. of powder in barrels and in fixed ammunition, and 80 loaded 6-inch howitzer shells, exploded on the morning of the 24th.

Those of the ravelins and of the front of the attack, have been injured, but without accident. Those of the bastions 3 and 4 have not received any injury.

Travelling and Portable Magazines and Depôts of Shells.

Two travelling and two portable magazines in bastion No. 1, two portable magazines in bastion No. 2, one portable magazine in the ravelin of signals, three different depôts of shells, and one of howitzer shells, have been blown up from the fire of the enemy.

Ordnance rendered unserviceable.

One 16-pounder brass gun has been struck by a ball in the first reinforce on the right side. The metal has been dented-in 2 inches deep, and 5 inches broad. An iron 24-pounder has been rendered unserviceable from the extension of its vent. Three iron 24-pounders have been struck upon the trunnions and on the chace; an iron 12-pounder has been split in the ravelin of the front of attack; an iron 8-pounder gun has been broken in two by the fall of a shell upon the muzzle ring, in the ravelin of the town gate.

An 8-inch howitzer has been rendered unserviceable by the breaking of the trunnions, which are separated from the reinforce.

An 8-inch mortar in the redoubt has had its trunnions bent, and rendered unserviceable; 700 new muskets have been broken in the armoury.

Carriages broken by the Fire of the Enemy.

	Broken.	Remain in good repair.	
24-pr. carriages	12	23	for 28 guns.
18-pr. do.	8	13	14
16-pr. do.	2	4	3
12-pr. do.	2	15	13
8-pr. do.	3	16	12
4-pr. do.	2	6	6
8½-inch howitzer	2		
6-inch do.	3	6	7
Mortar beds	4	9	13

Side Arms.

Two thirds of the side arms have been broken, although at the beginning of the siege, they were divided amongst all the batteries. We were on the point of wanting handspikes, the supply of which has never been completed, there only remained one handspike for each gun.

Platforms.

As there was not a single spare platform, but few planks; and as the greater part of the remaining platforms were made two years ago, it was necessary to repair those destroyed by the fire of the enemy, with the planks and boards arising from the destruction of the buildings which existed between the redoubt and the fort: this resource was soon exhausted, and in the two last days of the siege we suppressed the fire of the guns whose platforms were most injured, in order to repair with their remains those that were least so. On the morning of the 24th there only remained 81 guns and howitzers in battery, as well in the body of the place as in the redoubt and ravelins; only 44 platforms serviceable, and of this number 14 were in the outworks.

Waggons, &c. broke by the Fire of the Enemy.

Three ammunition waggons.
Two travelling forges.
Seven field service limbers, and one battery.
One devil cart.

The inventory of delivery of magazines, makes known the quantity of powder, fuzes, musket ball cartridges, &c. &c. remaining this day.

At Fort Dessaix, 26th Feb. 1809.
(Signed) ——— Bagot, Captain of Artillery.
G. W. Unett, Captain Royal British Artillery.

From the statements of the governor on his trial, confirmed by this report, it appears that three magazines exploded during the bombardment, that the arches of the gateways were broken through, and that the fort was given up through apprehension of the principal magazine, containing 300,000 lbs. of powder, being also blown up, the besiegers' shells having penetrated through some inches of the masonry.

As the arches thus broken through or damaged are stated to have been of the customary thickness of three feet, it would be natural to conclude that such thickness is not sufficient; but a thousand instances attest that a well-turned arch of three feet in thickness, of the span of eighteen feet, resting on sufficient piers and being covered with five feet of masonry and earth, will resist the heaviest shells: at least the magazines of Vauban, of nearly similar dimensions, were always found sufficiently strong in the war of the Succession and at the sieges between 1744 and 1748.

The strength of masonry is far greater in southern than in northern climates,* whilst the concussion produced by the fall of shells at equal distances and of equal weights, must be the same in all climates and in all ages: why, therefore, do arches of magazines give way more frequently now than in former wars? It can only be accounted for from the fact, that in the proportion that one shell was fired into a place in those days, we in our bombardments throw fifty into a place. Substance is now required much beyond that essential for strength. It is not sufficient that an arch have all the requisite proportions to resist the shock of the heaviest shell, and the piers a force to bear it up, or the roof a pitch to keep it dry; it must also have bulk over it to admit of the repeated abstractions of substance caused by numerous shells striking it in rapid succession. Each shell blows away a portion of the covering of the arch, and if their fall be so continuous as to prevent fresh covering being laid on, they speedily penetrate to the masonry; after which, each shell carries away two or three inches of the thickness of the brickwork, and in a few rounds the equilibrium of strength of the arch is destroyed. As soon as that is effected, a shell striking any part of the surface shakes the arch through and through, and after a time it is shaken down.*

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* The author once had in his possession a memorandum, made on the spot by an officer, that an arch of 18 feet span and 2 feet 9 inches thick, without any covering, resisted two shocks of 13-inch shells successively at the siege of fort George in Minorca.

That a bomb-proof arch should be kept extremely well covered, is therefore fully as important to its resistance as that sufficient dimensions be given to the arch itself. Officers in future must take precautions against the increased use of artillery of the present day, and no longer trust to dimensions derived from the experience of the wars of Louis XIV. In small places, like fort Bourbon, no magazine should have less than eight or ten feet of masonry and earth over its arch; and every governor, during a bombardment ought most sedulously to enforce the immediate restoration of every portion of earth blown away by the fall of shells.

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* A heavy shell falling on a bomb-proof arch well covered with earth has been known to cause such a concussion as to make wine glasses jump off a dinner table in a casemate without injury to the arch.

NOTE 52.

THE islands of Zealand being situated in a rainy district, and their general level being from 3 to 11 feet under that of the ocean at high tide, they are never completely drained; but more or less water invariably remains in the innumerable ditches with which they are intersected, and for half the year they become perfectly stagnant. Further, the surfaces of the islands being composed of a rich alluvial soil, and being kept highly manured, give a peculiar rapidity and luxuriancy to vegetation, and the consequences are, during summer, when the vegetable tribe ripen and decay, such a superabundant exhalation of miasmata as to produce endemic fevers.

These are of invariable recurrence, and last from the middle of June to the middle of October; but with a greater or less degree of virulence as the summer proves less or more rainy—that is, the longer and more powerfully the sun exhales the marsh miasmata so much the more unhealthy is the season.

The inhabitants name the disease Koorts, and more than two thirds of them suffer under it every summer. It is not, however, more fatal to them than the ague in the fenny and marshy districts of England is to their inhabitants, as the following extract from the printed monthly register of the district of Middelburg shows. The population included in this return is about 16,000 of all ages and both sexes.

	Deaths by the Koorts.	Other deaths.
July	4	32
August	6	34
September	11	47
October	9	37
November	9	47*

To strangers, however, this malady is dreadfully fatal, unless they live generously, have proper clothing to ensure equal warmth, and be accommodated with airy sleeping rooms on an upper floor, in which case the chance of escaping disease is very much in their favour, as was proved by the very great proportion of staff and other officers of rank who preserved their health during this expedition.

The natives strongly advise strangers to follow their example and fortify their stomachs with a glass of Snaps (gin) before inhaling the morning air, and also to swallow some solid food.

Attention to keeping the stomach frequently stimulated and always supplied with food, certainly proved an excellent aid for braving the climate on this service, for three or four officers who, on the advice of their Dutch landlords, provided themselves with a small flask of Madeira and a few biscuits, and used them moderately on every feeling of sinking, stood over and directed the workmen excavating ditches on the most marshy and unhealthy spots in the island with impunity from day-light till dark; though at the same time and place, others less able to provide for their craving member, or less provident, sickened almost immediately on coming on duty.

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* It should be mentioned that, in consequence of the quantity of rain which fell, and the cloudy and turbulent state of the atmosphere during the summer of 1809, the season was more than usually healthy.

The text gives the number of sick in the army; but the two following returns place the comparative sickness and mortality in a clearer view.

25th August.

	Rank and file.
Strength of the army	37,727
Sick	2,702
Died, including about 100 of their wounds . . .	114
Officers	1,794
Died all of wounds or killed . .	7

10th September.

	Rank and file.
Strength of the army	17,870
Sick	6,931
Died	221
Officers total	770
Sick	no return
Died	4

17th September.

	Rank and file.
Strength of the army	17,410
Sick	8,141
Died	277
Officers total	765
Sick	235
Died	7

24th September.

	Rank and file.
Strength of the army	16,409
Sick	8,754
Died	287
Officers total	782
Sick	191
Died	3

1st October.

	Rank and file.
Strength of the army	16,156
Sick	9,127
Died	254
Officers total	748
Sick	172
Died	2

The return for the first period strongly proves the favourable effects of excitement and employment on the efficiency of troops, as merely the expectation of immediate contact with an enemy served to keep the force in South Beveland proportionably more healthy than the inhabitants; and the men working in the wet ground, and exposed night after night to the exhalation from the newly opened trenches before Flushing, were equally healthy with those not so exposed: again, this return shows the officers generally to have suffered in far less proportion than the men.

From these facts, and few or none of the troops having been seized with the fever till the 18th August, it may be inferred that the climate of Zealand would have proved no bar to the success of this expedition, could the proposed plan of operations have been carried through with the celerity which less unpropitious weather would have assured; and it is to be hoped that, should the course of events ever again place a powerful hostile force in the Scheldt, neither the ill-success of this armament, nor the mortality amongst the troops, will deter England from attempting and completing its destruction. The enterprise should, however, if possible, be undertaken between the months of October and June.

The sad experience of the ill consequences of keeping troops in inaction in Zealand will prevent any such scheme being tried in future, and therefore it is unnecessary to mention the many deficiences and bad arrangements of lodging, diet, and medicine, which caused the disease to be so peculiarly fatal in 1809; but to give a general idea of the action and consequence of the Walcheren fever, the following opinion of the medical chiefs is quoted.

"Those who were robust were found more prone to this endemic disease than the old, puny, or consumptive, and such men as had been recruited from any mountainous districts were found more liable to be affected than those from flat fenny countries.

"The tendency to relapse was very great, and the deaths from relapses were numerous, and sometimes sudden. Perfect recoveries were rare; convalescence never secure; and where the recurrence of fever did not destroy life, it generally laid the foundation for permanent visceral obstructions, rendering a large proportion of the sufferers inefficient for future military purposes."

It should be mentioned, as a military consideration of importance, that the action of the marshy exhalation is very confined, and that the French parried its effects very much by keeping a large proportion of their troops hutted on the sand hills between Domburg and West Capelle.

In that situation, a little removed from the cultivated enclosures, the air was found to be comparatively dry and fresh, and the troops to enjoy infinitely better health than when in the towns. Perhaps, however, the circumstance of these men drinking tolerably pure water, obtained by digging two or three feet below the surface of the sand, instead of rain water preserved in tanks, (the general supply throughout the other parts of the island,) might have added to the salubrity of this particular spot; it is, therefore, further mentioned, in proof of the action of the miasmata being very confined, that the crews of the men of war and transports, which laid at anchor, during the whole sickly season of 1809, in the narrow channels between the most unhealthy spots of Walcheren and Beveland, remained perfectly free from fever or other affection from the air. In consequence of these facts, some officers were led to think that, by raising the level of Flushing four or five feet, so as to keep the ground perfectly drained, and erecting well ventilated bomb-proofs on two floors to lodge the troops in during winter, and having ships fitted to receive them anchored off the port in summer, a British garrison might have been kept in that town in a far more healthy state than in many of our tropical colonies.

NOTE 53.

IT was the opinion of many officers at this period, (perhaps of too sanguine temperaments,) that a moderate force might have securely held the island of Walcheren, or at least Flushing, as a military post to seal up the Scheldt, and much disappointment was felt at the island being abandoned now that the season had become healthy. The following report, however, from General Don, shows that the attempt would have required a degree of preparation, and the employment of a force which no ministry would have been justified in giving to the object.

Report.

" This island is thirty-four miles in circumference (including St. Joostland,) of a circular form, and is situated between the mouths of the East and West Scheldt.

" The whole coast is assailable.

" The south-west and north line of coast, extending from Flushing to the Veer Gat, can, for eight months in the year, be protected by a naval force, but the marine defence of the coast from the Veer Gat to the Rammekins is not to be depended upon, as the anchorage for frigates and armed vessels is within the range of the enemy's fire from South Beveland and Wolversdyke, and North Beveland; and further, the marine defence of the whole coast for nearly four months in the year cannot be relied upon, as the ships must quit their anchorage as soon as the ice begins to float.

"Three-fourths of the coast is inclosed by the enemy's shore, viz. by Cadsand on the south.

"South Beveland and Wolversdyke on the east.

"North Beveland and Schowen on the north east; and the coast between Rammekins and the Veer Gat is within the range of the enemy's fire, as has already been mentioned.

"This island may be attacked from the following points, viz.

"Sluys,

"The West Scheldt,

"Passage between South Beveland,

"Wolversdyke,

"Passage between Wolversdyke and North Beveland,

"The East Scheldt, and also from Ostend and Helvoetsluys.

"To place this island in a strength of defence, the towns of Flushing and Ter Veer must be fortified, strong Martello towers, armed with heavy artillery, must be built on the coast, with batteries constructed under their protection, and military stations established, with communications for field artillery, between each.

"The present works of the town of Flushing must be thoroughly repaired, and the defences increased, the flanks greatly strengthened, the ditches deepened, and casemates for at least 3,500 men constructed; powder magazines, bomb-proof hospitals and store-houses must also be built.

"The town of Ter Veer must be put into a state of defence in a similar manner, with this difference, that casemates for 1,500 men will be sufficient, with powder magazines, bomb-proof hospitals, and storehouses in proportion.

"The following towers must be constructed, viz.

"One for five heavy guns at Vycheter Battery.

"One for three heavy guns at the Nolle House.

"One for five do. at the French new work, called by the English the Black Battery.

"One for three do. at the Polder Zind Watering.

"One for five do. at Rammekins.

"Three for three guns each, on the south-east coast of the island of St. Joostland.

"One for five do. at Cape Armuyden.

"Two for three do. each, between Cape Armuyden and Ter Veer.

"Two for three do. each between Ter Veere and the Veere Gat.

"One for five do. at Den Haak.

"Three for three do. each, on the Bree Sands and Domburg.

"Three for three do. each, from Domburg to West Cappel, and

"Four from West Cappel to Vycheter Battery. And for the further defence of Flushing:—

"One for three guns at Konkirke Windmill.

"One for three do. at West Zouburg.

"One for do. at East Zouburg.

"One for three guns at Ruttem.

"The four last-mentioned towers are intended for the outposts from Flushing, and may be considered in the first instance as the boundary of the Flushing inundation, by cutting the dyke under the fire of the town, for it is calculated that it will require five or six days to inundate the country as far as the line of the said towers, consequently, it becomes an object of great importance to hold the said line until the inundation rises to that height, which would preclude the enemy from advancing beyond the said chain of posts.

" The present ditches across this part of the country might in some degree be formed into a canal extending from tower to tower, and by raising a bank on the inward side, the Flushing inundation might be confined within the semicircle formed by the said chain of towers.

" At each of the towers (with the exception of the four last mentioned) a powerful battery ought to be constructed, at a distance from the tower of 100 to 150 yards, according to the nature of the ground.

" Block-ships, armed with 24-pounders, will add much to the marine defence of the coast between Rammekins and Ter Veere, particularly in the vicinity of Rammekins and Cape Armuyden.

" Military stations to be established at the following points.

" At Flushing, for one brigade of artillery, one troop of cavalry and 300 infantry.

" At the Rammekins, for one brigade of field artillery, half a troop of cavalry, and 2,000 infantry.

" At the salient point of St. Joostland, towards St. Joostland, one brigade of field artillery, half a troop of cavalry and 2,000 infantry.

" At Cape Armuyden, for two brigades of field artillery, half a troop of cavalry and 3,000 infantry.

" At Ter Veere, one brigade of field artillery, half a troop of cavalry and 2,000 infantry.

" At Point Den Haak, for one brigade of field artillery, half a troop of cavalry, and 1,000 infantry.

" At Domburg, for one brigade of field artillery, half a troop of cavalry, and 1,000 infantry.

" At West Cappel do. do.

" At St. Joostland do. do.

" At Middleburg, for two brigades of field artillery, two troops of cavalry, and 5,000 infantry.

" Military communications must be formed from station to station, along the dykes and from Middleburg; as follows, viz.

" To Flushing (already made), Ruttem and Rammekins, along the right bank of the Middleburg canal to the junction of St. Joostland creek, and from thence to the Rammekins.

" From the said junction across the island of St. Joostland to the salient point.

" Along the left bank of the Middleburg canal to the saw mills, Armuyden and Cape Armuyden.

" To Cleverskirke and the dyke, about half way between Cape Armuyden and Ter Veere.

" To Ter Veere (already made) to St. Laurens and Scrookskirke, with a branch to Den Haake and another to Domburg.

" To Gryspirke and West Cappel, Konkirke and Zouteland.

" All these communications must be formed so as to admit of car artillery moving at the rate of six miles an hour.

" The land forces requisite for the permanent defence of the island will be nearly as follow.

" Twelve brigades of field artillery.

" Two hundred artillery men for the garrison of Flushing.

"One hundred artillery men for the garrison of Ter Veere.

"Two hundred and fifty artillery men for the towers.

"Four hundred do. for the coast batteries.

"Seven troops of cavalry.

"Twenty-one thousand infantry: making in all a force of 23,150 men.

"With the above force and arrangement, this island may be considered as inassailable; at all events capable of a most obstinate defence.

(Signed) "GEORGE DON,
Lieutenant General."

"HEAD QUARTERS, MIDDLEBURG,
Nov. 3d, 1809."

NOTE 54.

DEFENCE OF TARIFA.

Plate XVII.

HAVING detailed every offensive siege operation of the British forces in the West of Spain, it would be an act of injustice to the defenders of Tarifa to close these volumes without adding some account of their equally arduous defensive achievements in the South.

Tarifa, a town with 3,000 inhabitants, surrounded by a very old gothic wall flanked by towers, stands on a promontory forming the southern extremity of Spain and Europe. The flanks of this promontory are washed by the sea, at such short distances from the walls of the town as to preclude the approach of an enemy from the west and south, and leave only the northern and eastern defences exposed to be regularly attacked. A massive defensive building, called the castle of the Guzmans, closes the gorge of the town; and in rear of this castle, at the distance of 400 yards, lies the island of Tarifa, of an elliptical figure, measuring 800 yards by 600 across its diameters, and communicating with the continent by an artificial and narrow causeway of nearly 200 yards in length. The island of Tarifa is bounded by an inaccessible cliff, except for a very limited space, where the causeway communicates with the main land; and between the island and the town are the heights of St. Tolmo and St. Catalina, which, in a military point of view, may be considered as intermediate stations, connecting the defence of the island with that of the town.

This post forms the north-west point of the entrance of the straits of Gibraltar from the ocean, and, offering good and well-protected anchorage for both large ships and small craft, is of primary importance to the navigation of the straits during war; and at the period of the blockade of the island of Leon, Tarifa became the great point of assembly for supplies of every nature for Cadiz, it not unfrequently occurring on the first day of an easterly wind for 2,000 head of cattle, sheep, and swine, to be embarked and conveyed in boats to that city.

Tarifa also served as a rallying place for the Spanish bands and their point of communication with Gibraltar, from which garrison they renewed their arms, ammunition, and clothing.

From this description, it will be seen, that Tarifa was not only a favourable, but also a most important point for being strongly fortified, though utterly overlooked or neglected by the Spaniards.

Its great influence on the operations of the war at the extremity of the Peninsula did not, however, long escape the observation of Marshal Soult, and in April, 1810, he detached a force to take possession of the town and island, and render them a permanent place of arms and maritime post for a French brigade and squadron of gun-boats; but General Campbell, Governor of Gibraltar, obtaining information of his design, sent over a detachment of 300 British under Colonel Browne, 28th Regiment, a day or two previously to the arrival of the French corps, and this small body, after a sharp affair of twelve hours, beat off the advancing force in a spirited attempt to escalade the place.

After this failure, the French left Tarifa in quiet possession of the Spaniards till August, 1811, when Napoleon, having nearly concluded an agreement with the Emperor of Morocco to prohibit any exports from his dominions to Cadiz, Marshal Soult determined to possess himself of Tarifa as a further step towards starving the population of that city into submission. General Campbell, on ascertaining these intentions, visited Tarifa with his chief engineer, Sir Charles Holloway, in order to arrange measures for placing the island in a state of defence; and a line of works *m. m.* being traced out across the only accessible point of approach from the continent, was immediately commenced.

In September, General Balasteros was appointed by the Spanish Regency to endeavour to keep the war alive in this southern corner of the Peninsula, and in October a force of 1,200 British, under Colonel Skerrett, was detached from Cadiz by General Cooke, and disembarked at Tarifa, to act in concert with and support Balasteros's movements. After various petty operations near Algeciras, the Spanish irregulars were driven to seek security under the guns of Gibraltar, and the French then turning a very superior force against Colonel Skerrett, he fell back in November on Tarifa, as did 700 Spanish troops under Brigadier Copons.

The Governor of Gibraltar having taken upon himself the responsibility of ordering Colonel Skerrett to defend the town of Tarifa as long as practicable, and then retire to the island, Captain C. F. Smith, the senior engineer, with Colonel Skerrett, took immediate steps and exerted himself to the utmost to strengthen the various defences of both places. Large working parties were incessantly employed in converting the convent of St. Francisco in the suburbs of the north front into a respectable advanced work; also in establishing a post on the hill of St. Catalina, to block up the Isthmus and flank the western shore; and further, to render the castle of the Guzmans, which covers the sea gate and enfilades the southern beach, a defensible post.

Investment.

These and other works of defence were pursued with activity till the 20th December, when a French corps of 8,500 men under General Laval appeared before the eastern side of the place, covered by a detachment of 1,500 men posted on their lines of communication with Chiclana and Algeciras.

This force brought with them a battering train of—

Four brass 16-pounders.

Three brass 12-pounders.
Two brass 9-inch howitzers.
Also one brass light howitzer and
Two brass 3-pounders.
and from 30 to 40 wall pieces, carrying a 2-oz. ball, mounted on frames.

Arrangements of the Garrison.

The defensive troops were thus disposed.

In the town, British 1,200, detaching to the convent 100.
Do. Spaniards 500 do. do. 100.
In the island, British 600, detaching to St. Catalina 50.
Do. Spaniards 200 do. do. 50.

Total in the town. . . .	1,500.
Island . . .	700.
Convent . . .	200.
St. Catalina . .	100.

Artillery

IN THE TOWN.

4 light 6-pounders on the N. E. and N. W. Towers.
2 Spanish 12-pounders on the Eastern Tower.
4 Coehorn mortars { on the front attacked, moved according to circumstances.
—
10

IN THE ISLAND.

2 iron 24-pounders on traversing platforms.
2 24-pounder carronades in the flanks.
4 12-pounders } in battery.
2 10-inch mortars } in battery.
1 brass Spanish 12-pounder.
1 do. do. 7-inch howitzer.
—
12

ON THE HILL OF ST. CATALINA.

1 Spanish 12-pounder.

Total ordnance mounted 23.

Besides the above:—

One iron 18-pounder was landed from the Stately, man of war, and by the exertions of the seamen mounted on Guzmans' Tower.

One brass 5½-inch howitzer on the tower of the Retiro. But these two pieces were immediately overpowered by the enemy's fire.

Also two light 6-pounders were kept in reserve, in a fleche constructed outside the sea gate for sorties.

Officers of Artillery.

Captain Phillip Hughes.
——— Edward Mitchell.
Lieutenant William A. Raynes.
———— Charles Manners.
———— William Robe.
———— Henry R. Wright.
———— ——— Hodges.

Captain Hughes commanded the artillery generally; Captain Mitchell directed its operations in the town, and Lieutenant Robe in the island.

Officers of Engineers.

Captain C. F. Smith.
——— Vavasour.
Lieutenant Barney.
———— Birch.
———— Longley.

Colonel Skerrett and Brigadier Copons remained in the town.

Major King, 82d Regiment, commanded in the island.

Captain Campbell, 47th regiment, had charge of the convent of St. Francisco.

Captain Wren, 11th Light Infantry, the height of St. Catalina.

The Stately of 64 guns, Captain E. S. Dickson, Druid Frigate, and several gun and mortar boats were anchored in a position to flank the best approaches to the town, and added greatly to the defensive powers of the place. Indeed, it must in great measure be attributed to the presence of the fleet that the weakest side of the place (the northern) escaped from being made the point of attack.

21st December.

The investing corps having imprudently pushed forward their advanced posts close to the suburbs without proper support, a sortie was ordered, in which Captain Wren, 11th Regiment, succeeded in making prisoners an advanced picket.

22d December.

The main body of the investing force having, during the night, approached and taken up ground within shot of the ramparts, a sortie was made in great strength to induce them to form under arms, so as to ascertain their numbers. This brought on a good deal of loose firing, and the French were supposed to have sustained many casualties from shells thrown from the town.

The squadron also annoyed them very materially by the fire of their heavy ordnance, which, plunging generally over the ground occupied by the investing posts, promised to be of most essential service in retarding their approaches; but unluckily a gale of wind drove the ships to sea before the final struggle.

Breaking Ground.

This night the French broke ground on the heights about 500 yards from the eastern front of the place, and continued steadily to push on their approaches as marked on the plan during the 24th, 25th, 26th, 27th, and 28th December, under a constant and well-directed fire of musketry and artillery from the ramparts.

A good deal of effect was evidently produced on the besiegers by spherical case burst amongst them from the 6-pounders on the north-east tower *a*, and also from the 24-pounders in the island which fired over the town without molestation to the inhabitants or defenders.

The Coehorn mortars were also used with effect, and the guns of the ships during the first days of the attack were very annoying to the French workmen

The besiegers replied to this fire and covered their attack by numerous wall pieces, the effect of which was occasionally severe, and would have been very destructive but for an immense supply of sand bags received from Gibraltar, which enabled the garrison to cover their artillery and musketry and raise their parapets generally.

29th December.

This morning the besiegers opened from battery No. 1, with four 16-pounders, on the eastern scarp wall of the town near the Retiro gateway, and from battery No. 2, with four howitzers and two field pieces, on the island.

The first shot passed through the wall of the town and lodged in a house in its rear; and each successive shot penetrated more or less beyond the masonry revêtement, producing so much mischief that, in a few hours, a practicable breach was formed. The fire against the artillery on the island, however, produced little effect, as the guns, being mounted on traversing platforms, were sufficiently sheltered by their parapets to cover the gunners completely.

Immediately the point intended to be breached was ascertained, every possible measure was adopted by Captain C. F. Smith to retrench it or render the entry difficult. There being a difference of level between the rampart and the street of thirteen feet, it was kept clear from rubbish, and the space within covered with strong iron gratings taken from the windows of the houses, having the intermediate bars broken and turned up. Every street communicating with the rear of the breach was blocked up with defensive traverses; and the houses in its vicinity were loopholed for musketry and furnished with hand grenades.

Similar precautions were also perfected in rear of every point of the wall likely to be escaladed; so that the garrison might defend every house and every street, and wherever attacked finally concentrate in the substantial and lofty castle of the Guzmans; from whence it was arranged for the troops to descend by ladders and gain the island.

Night of 29th December.

The enemy ceased to batter at dark, but at intervals fired grape on the breach. Working parties of the garrison were employed between the discharges in clearing the front of the breach, which they did with much effect.

30th December.

At day-light the besiegers' batteries opened as on the previous day, and after a few rounds rendered the ascent of the breach perfectly easy. In the evening the opening in the wall measured nearly sixty feet, being almost the entire space between the two towers, *b. c.*

Night of 30th December.

At dark working parties of the garrison were again employed, in the intervals between the besiegers' discharges of grape, to clear the foot of the breach, and every defensive expedient was actively augmented and improved.

Early in the night a most heavy rain began to descend, and the rivulet soon swelled into a formidable torrent, bringing down from the enemy's trenches, planks, gabions, fascines, dead bodies, &c. with a force which swept away a row of defensive palisades placed across the bed of the river; and the united pressure of this mass against the portcullis bent it so much as to make an opening into the town. This accumulation of water also materially injured the defensive works within the breach, and every thing seemed to predict failure and discomfiture; but the garrison, steady and determined in their resolution, parried every misfortune by increased energy and exertion, and soon after day-light had re-instated all their defensive expedients.

31st December.

About 8 A. M. every thing being prepared to resist an assault, a column of the besiegers, of nearly 2,000 men, was observed advancing towards the breach along the bed of the rivulet.

This covered approach was selected for the advance of the assaulting parties, as it conducted them almost in safety to a road which winds up its left bank and leads directly to the breach, only exposed for a few yards of its course to the fire of the place. Instead, however, of ascending to their left by this road, the assailants continued their march along the bottom of the valley past the turning, by which error they missed the breach and reached the walls of the town at the portcullis in the tower across the entry of the rivulet.

The officer commanding the assaulting party fell covered with wounds, and gave up his sword through the portcullis; on which the other officers and the bravest of the men, spread in an isolated manner to their right and left along the foot of the scarp wall and opened a fire of musketry on the defenders. In that exposed situation they were picked off by the infantry, or destroyed wholesale by the 6-pounders on the north-east tower, till finding their loss excessive, they again sought shelter in the valley of the rivulet, and after a little while the mass of assailants returned to the trenches, leaving many wounded officers and men lying close to the defences.

Colonel Skerrett, shortly after the attack had ceased, proposed a truce, and brought ten of the wounded officers and many of the men into the town up the breach; but finding this a laborious duty for his garrison, as well as injurious to the defences of the breach, he permitted General Laval to send parties of French and remove back the remainder into his trenches.

The loss of the garrison in this defensive struggle was 2 officers, 7 rank and file, killed; and 3 officers, 24 rank and file, wounded: amongst the former was Lieutenant

Longley of the engineers, who had been conspicuously active and useful throughout the defence.

Expenditure of Ammunition by the Garrison.

24-pounder shot	40	Total of round shot. 250
12 do. do.	60	
6 do. do.	150	
10-inch shells	60	Total of shells. 790
7 do. do.	5	
5½ do. (or 24-pounder) .	75	
4⅖ do. (or 12 do.) .	500	
3½ do. (or 6 do.) .	150	
12-pounder case shot . .	1	Total of case shot. 31
6 do. do. . .	30	

General Total 1071 rounds.

Raising the Siege.

The means of attack brought by the French being almost expended, they made no further effort after their failure in storming, beyond keeping up an occasional fire of artillery on the place, but on the night of the 4th January, 1812, retired, having previously maimed their heavy ordnance and collected their waggons, stores, &c. into piles to be burned.

The roads, however, were so extremely bad, and the night so extremely dark and tempestuous, that at daylight the retiring force had made such little progress, that a sortie from the garrison succeeded in capturing some of the rear-guard and rescuing most of the stores and carriages from the flames.

The besieging corps continued its retreat to St.

Mary's, where it was broken up, and the trenches being filled in before Tarifa, all apprehensions of any further immediate effort were removed, and the British troops returned to Cadiz; but it being expected that the French would send a force in the spring more abundantly provided with the means of attack, orders were given for the island being further strengthened with works and the necessary appendages of bomb-proofs, magazines, &c. to resist a formidable attack. These additions were commenced with vigor; but the well-timed and decisive blow struck at this moment by the Duke of Wellington at Ciudad Rodrigo, and followed in such rapid succession by the reduction or defeat of the French garrisons and armies at Badajos, Almaraz, Salamanca, and Madrid, rendered them and all other defensive preparations useless, by changing the character of the war, which, after this campaign, became an uninterrupted series of triumphs.

Here, in concluding the record of the siege services on the western side of the Peninsula, it may be permitted to observe as matter of proud triumph to the British army, and of just congratulation to the British artillery and engineers, that, although every post and fortress held by the French from the Tagus to the Pyrenees (Burgos excepted) fell to their efforts, they never lost or abandoned, in the whole course of the war, a place or post which they attempted to defend, whether regularly fortified like Gibraltar and Carthagena, hastily enclosed and occupied as Abrantes, Peniche and Alicante, covered with field defences, as Lisbon, Cadiz, and Setuval, or merely surrounded by an archery wall and towers like Tarifa.

THE END.

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